



Emotional experience:

An exploration of reestablishing the connection with nature through novel street tree planning in Providence, RI

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with nature through novel street tree planning
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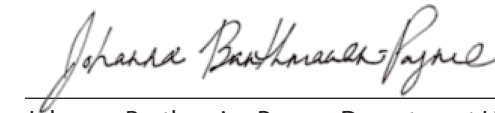
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Abstract

This thesis explores the causes of the unprecedented disconnection of humans from nature experienced in modern society. To improve this disconnect, this proposal seeks to place the street tree at the intersection of nature and culture through urban installations that intensify urban sensory experiences. By strengthening human sensory perception, promoting stewardship through diverse participatory planting plans, enabling urban 'foraging,' creating community-led and household maintenance regimes, the street tree installations will increase public health outcomes and create environmental agency within the public realm. I sincerely believe that the ultimate mission of landscape architecture lies in encouraging a healthy, poetic, and joyful life that we deserve to live in, and I think that creative street tree design can accomplish this!



source: web image

Introduction

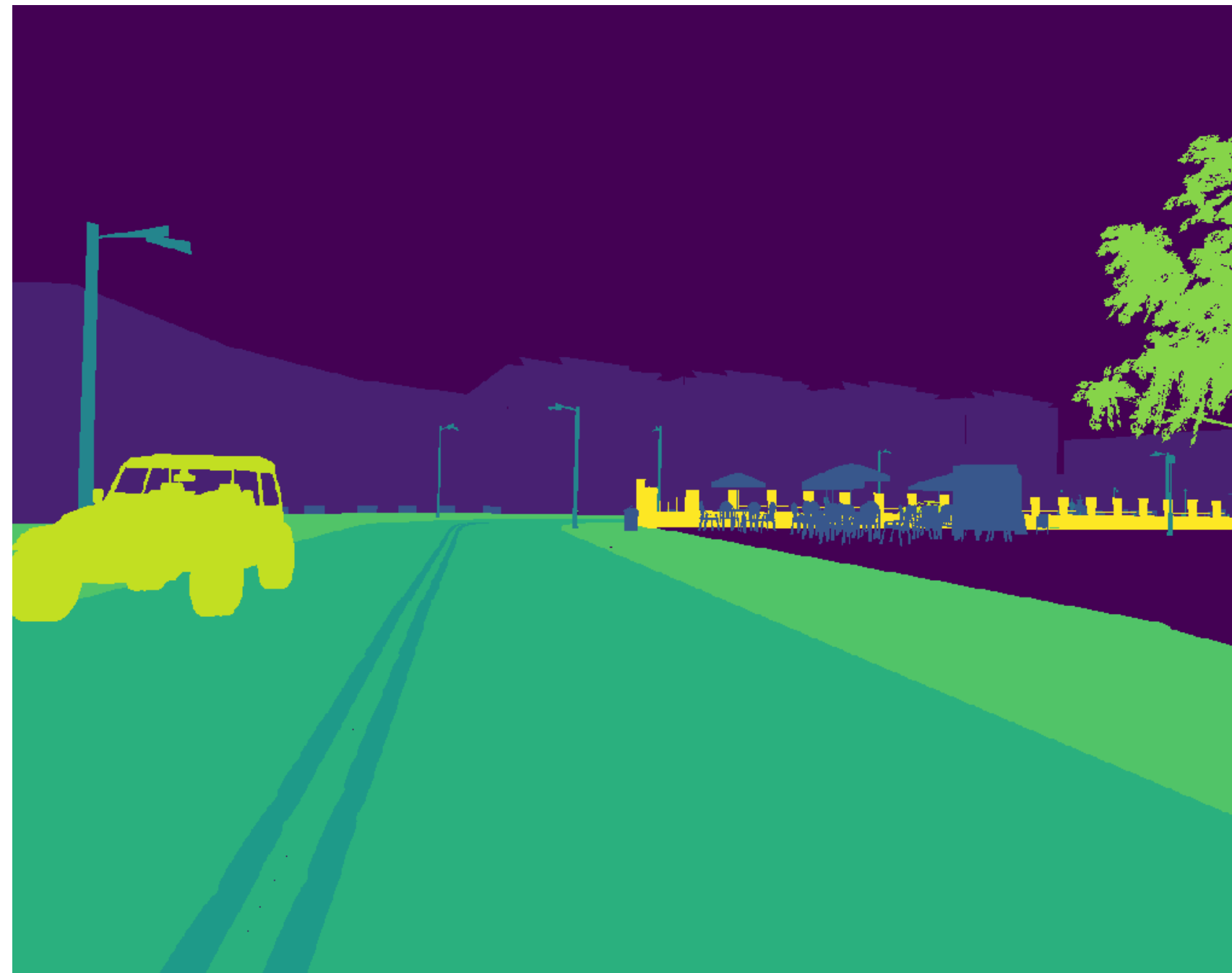
Trees, listening to the sound of the word coming out of your mouth, taking a trip around the air, and echoing in the back of your mind. It is so familiar and so strange at the same time. You feel like you should know them, but language evades when you are about to speak.

Nature, which used to play a massive role in our lives, is gradually shrinking away in the process of colonization and capitalism. Most of the time, we don't even know that we don't know plants. As a landscape designer, my duty is to use my place-making skill to re-evoke people's sense of stewardship, participation, and appreciation for nature. Stay healthy, stay joyful and enjoy the gift of life.

I want to use my thesis as an experimental opportunity to explore the reasons behind our ignorance of nature and, based on this, try to come up with innovative ideas to establish a new connection.

CHAPTER ONE

THE THEORY OF COGNITION AND THE PROCESS OF ALIENATION

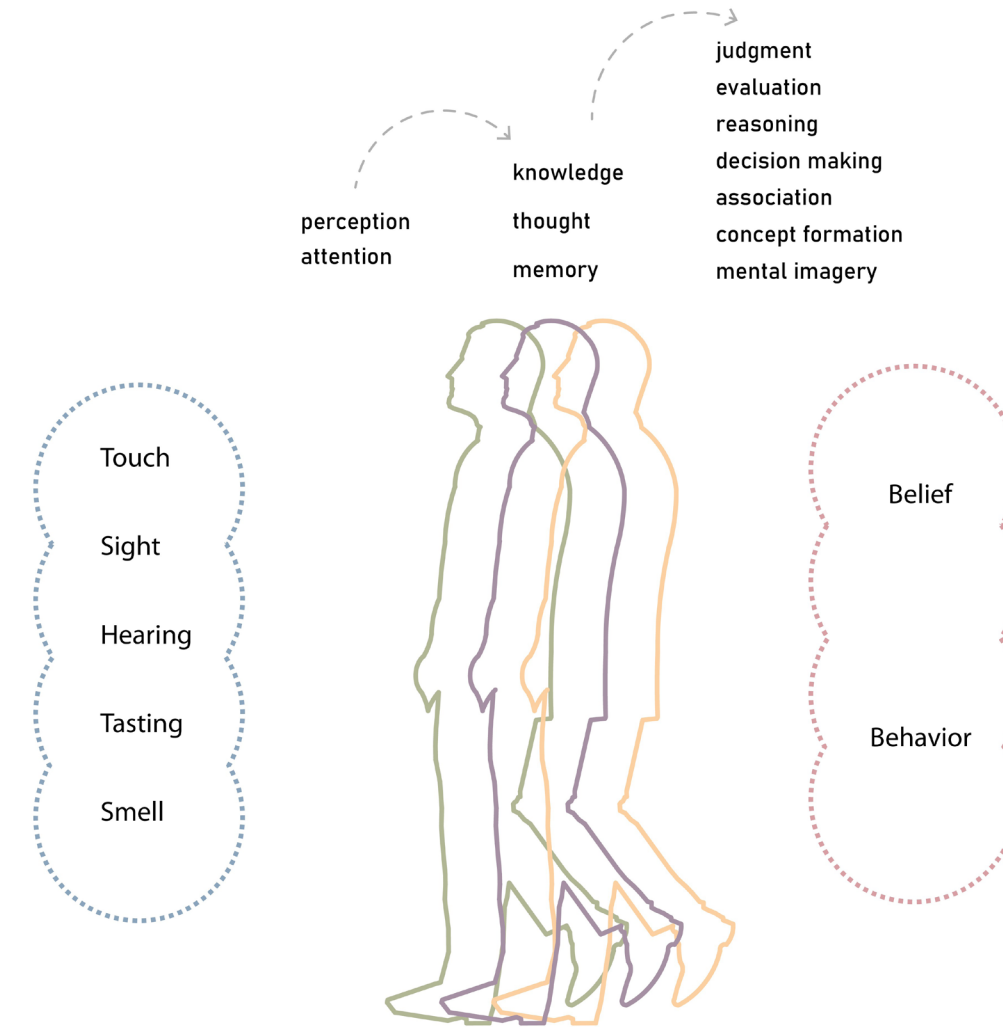


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Cognition theory

Cognition refers to “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.”¹

The way we perceive the world around us decides our beliefs and behaviors.



¹ “Cognition.” In Wikipedia, April 29, 2022. <https://en.wikipedia.org/w/index.php?title=Cognition&oldid=1085226505>.



La Crau dry grassland (Mediterranean steppe) in southern France

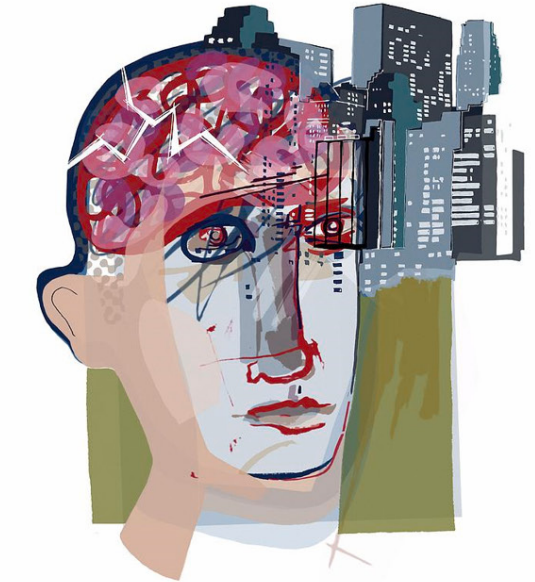


Lascaux Paintings, 17,000 years old, France

In ancient times, people made paintings on cave walls to record information about hunting locations and food processing steps. When the time comes to make a critical choice, the information stored in drawings helps guide the way. Early religions were built on the fear of the overwhelming power of nature and other unexplainable phenomena.



NYC_ extreme urban environment

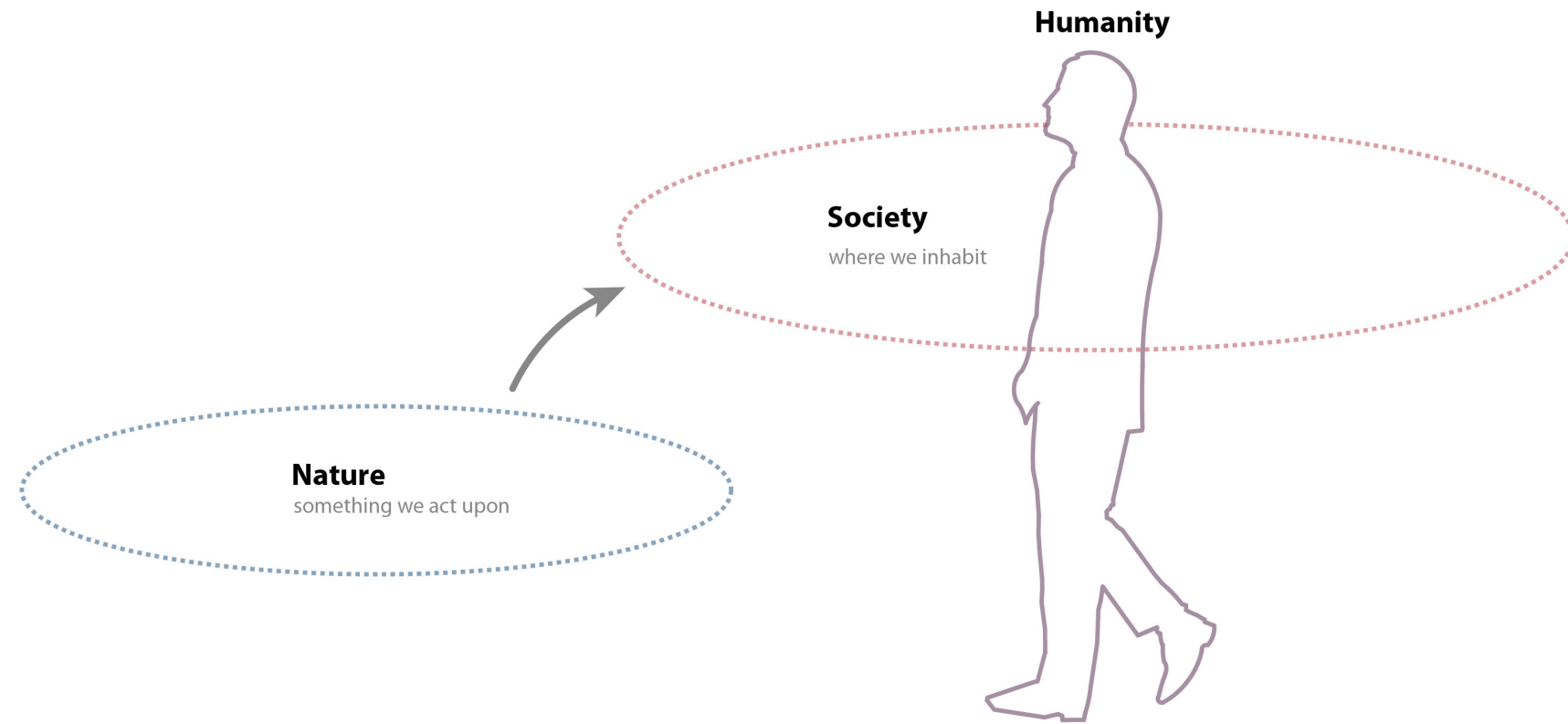


urban-mental-health-paul-brown

Accumulated intelligence and knowledge made our life easier in the wild. But as a cost, the systems around us have become more complicated than ever. Anthropogenic factors are now the dominant contributor to changing ecosystems.² In modern society, people spend most of their time either inside buildings or in moving vehicles. The traditional understanding of our position in the world is changing. The way we perceive the world is transferred gradually from first-hand experience into information found online. In an era where it is normal for people to dwell in an artificial environment, it is hard to recenter their attention back to the natural system.

This tremendous shifting of human habitat setting, the ways of perceiving the surrounding environment, and our relationship with nature are gradually and radically changing our memory, thoughts, judgment, belief, and behavior. A healthy relationship with nature not only helps in our personal health but also helps in maintaining a healthy ecosystem for future generations.

² "Uncommoning Nature - Journal #65 May 2015 - e-Flux." Accessed October 31, 2021. <https://www.e-flux.com/journal/65/336365/uncommoning-nature/>.



The influence of colonialism and capitalism
Lexicon is used as a method to reveal the logic behind the separation between nature and culture.

The set stage of capitalism

Colonialism

The colonialism concept that gets explored in this study is a broader idea than the traditional definition, which is “a practice or policy of control by one people or power over other people or areas, often by establishing colonies and generally with the aim of economic dominance.”³ It is wherever one claims ownership on a natural object, a piece of land, or other people. The beginning of traditional colonialism began during the Age of Discovery in the 15th century; however, the beginning of a broader idea of colonialism can be traced back to the notions of private property, which stem from 17th-century philosopher John Locke’s theory of homesteading.

Alienation⁴

During this property ownership transformation, peasants and indigenous workers have become direct forms of labor power, creating the state of separating one’s milieu, work from products of work, or self. This separation resulted in emotional detachment from objects that are supposed to have the most connection with the maker.

Capitalism

The term capitalism refers to the economic system established to make a maximum profit through trade. In some extreme settings of capitalism, every other value of an object is stripped off until one last number is left to represent everything.

“Cheap Nature”⁵

In the setting of capitalism, the resource for products such as food, energy, raw materials, and labor power is defined as “cheap nature.” We see society as the place where we inhabit and nature as something we act upon in the stage setting of capitalism. In Moore’s clearest formulation: “Capitalism is

not an economic system; it is not a social system; it is a way of organizing nature.”

Dualism⁶

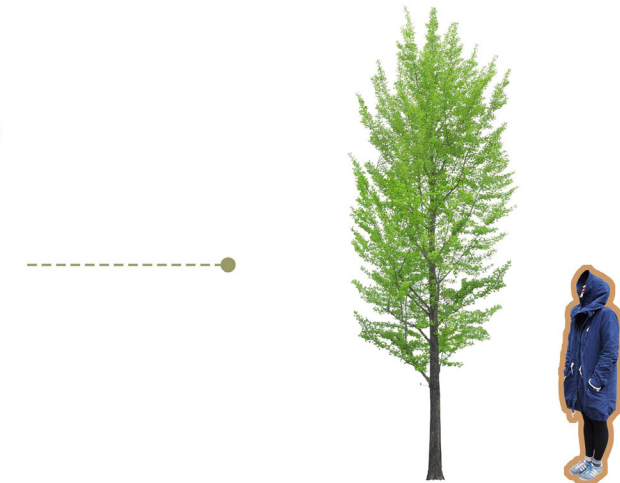
When we separate ourselves from the natural ecosystem and the web of life, it is easy to fall into the abyss of dualism. Dualism brings opposition and conflict.

Human exceptionalism⁷

In the dualism setting, we see ourselves as different from all the other organisms. We tend to believe all human behavior is controlled by culture and free will, and all problems can be solved by technology.

Epistemic violence

Epistemic violence is a product of capitalism. A simple explanation of this term is over-abstraction. For example, sometimes, we see streets as a concept rather than unique individuals growing, struggling, and bearing stories that have strong connections with a family or two.



³ “Colonialism.” In Wikipedia, May 29, 2022. <https://en.wikipedia.org/w/index.php?title=Colonialism&oldid=1090424613>.

⁴ Davis, Heather, and Zoe Todd. “On the Importance of a Date, or, Decolonizing the Anthropocene.” *ACME: An International Journal for Critical Geographies* 16, no. 4 (December 20, 2017): 761–80.

^{5, 6, 7} Moore, Jason W. “The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis.” *The Journal of Peasant Studies* 44, no. 3 (May 4, 2017): 594–630. <https://doi.org/10.1080/03066150.2016.1235036>.

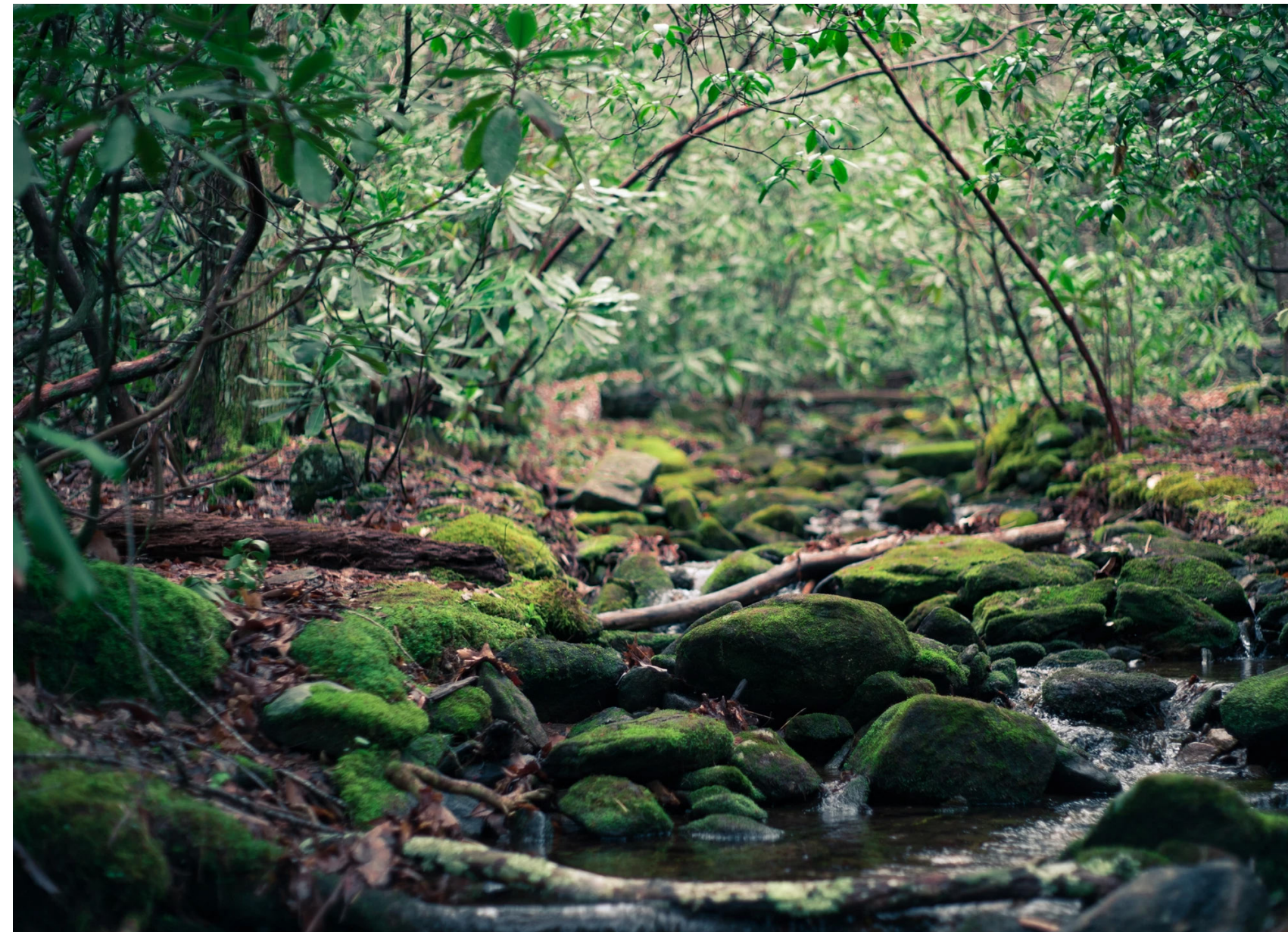
Imagine the many different relationships you have with a chick in the farm and with the pet dog, a beloved family member. What if we transfer that type of intimacy into the design of street tree plans?

Thesis question

How to use street trees as the in-between space of wilderness and urban life to evoke an intimate connection and break the dualism of nature and culture?

CHAPTER TWO

CASE STUDY 01: SHINRIN-YOKU, A THERAPEUTIC ACT OF SPENDING TIME IN A FOREST



source: <https://www.greenhoundcanada.org/post/shinrin-yoku-forestbathing>

The Japanese practice of Shinrin-yoku, or forest bathing, is the simple and therapeutic act of spending time in a forest.

As a medical practice in Japan, forest bathing can be traced back to the 1980s, when people started to realize the negative influence on health caused by anxiety and depression.⁸ It is difficult to slow down and get truly relaxed in big cities with overwhelming sensory stimulation. This is where the importance of forest bathing becomes apparent. Being fully immersed in a forest, paying attention to the subtle but poetic sensory stimulation gives us a moment of peace.

In the forest, people experience a different scale of time and space. When we pay attention to the sound of crunchy leaves on the ground, the color, the rough surface of tree bark, the moisture in the air, and the simple change around will allow us to enter the state of meditation naturally.



source: web image

It is not easy to find a forest within cities to provide an immersive environment. However, paying attention to the existence of street trees, noticing their struggle and growth, shadows in the summer, and the fragrance of flowers and fruits can somehow be a good start to finding a connection with nature.

Together with the contemplative and therapeutic garden, the forest shower expresses the potential healing power hidden in a healthy relationship with nature. Sensory-oriented design is a powerful tool I want to test out in the street tree plan.

⁸ Thrive. "Forest Bathing: What It Is and Why You Should Try It." Accessed May 29, 2022. <https://thrive.kaiserpermanente.org/thrive-together/live-well/forest-bathing-try>.

CASE STUDY 02: HISTORY_ NYC STREET TREE TIMELINE



NYC street tree timeline- an example of extreme urban condition

17-18th century
severe deforestation on the island of Manhattan
Surviving primal forest on Inwood Hill in Manhattan

1832-1866
Cholera outbreaks
by the middle of 19th century NYC's urban center lacked trees
street tree planting was a private affair

1850s the know nothing movement
"filthy and worthless foreigner"
NATIVE AMERICANS.
BEWARE OF FOREIGN INFLUENCE

1870 the department of parks
1872, Arbor Day established
1870s the tree planting association of nyc proposed one species per block, showing an early attention to **variety**

1873 Smith drafted and introduced a bill into the legislature for the cultivation of street trees to improve health conditions, which turned into recommendations.

1884 state legislation had begun to force wires underground in NYC and Brooklyn, street trees were cut down to lay subterranean conduits.

1897 THE TREE PLANTING ASSOCIATION OF NEW YORK CITY
to promote street tree planting, care, and protection
The only form through which the residents of the city can come in daily contact with nature as we know it in the woods and fields.

1902 Tenement Shade Tree Committee
regularity and uniformity
Straight streets should be planted with irregular groups of trees.

1914 the street tree survey for the Tree Planting Association

1910s the department of parks finally taken charge of street trees

1920s the fifth dimension: life

1943 New York City's 1943 planning lists for postwar street tree planting showed the predominance of different species in the various boroughs.

1950

Map of part of New York City showing underground mains of the Edison Electric Illuminating Co. of New York

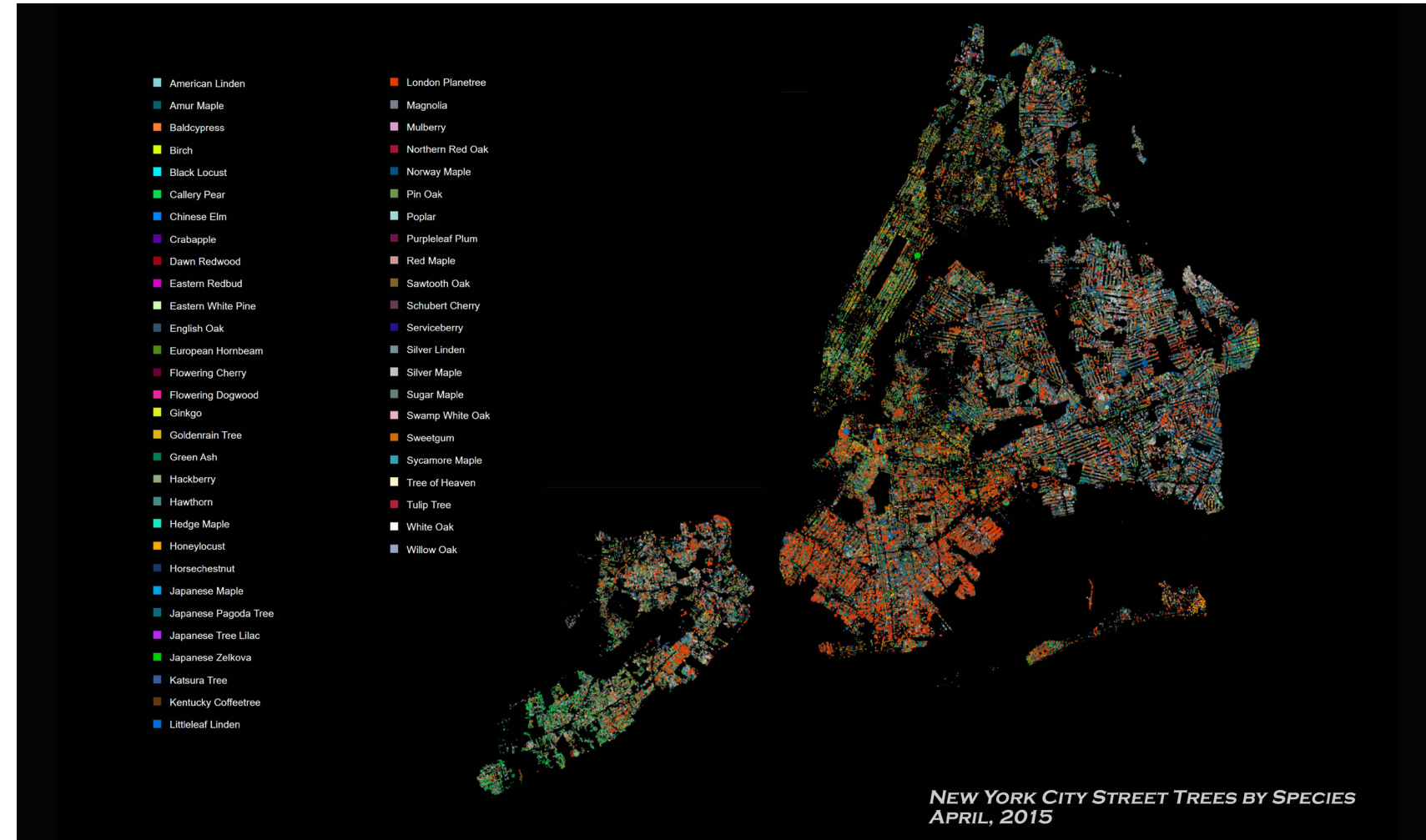
Map of New York City showing boroughs: MANHATTAN, THE BRONX, QUEENS, BROOKLYN, STATEN ISLAND

Species and planting patterns:
 Manhattan: Oriental plane
 Brooklyn: Norway maple and Oriental plane
 the Bronx: pin oak, linden, and American elm
 Queens: pin oak
 Staten Island: and a mixture of Norway maple, pin oak, and red oak

Planting diagrams:
 half distance planting and removal
 double rows of different ages
 use fast and slow-growing tree species to provide continuous shade and timber yield

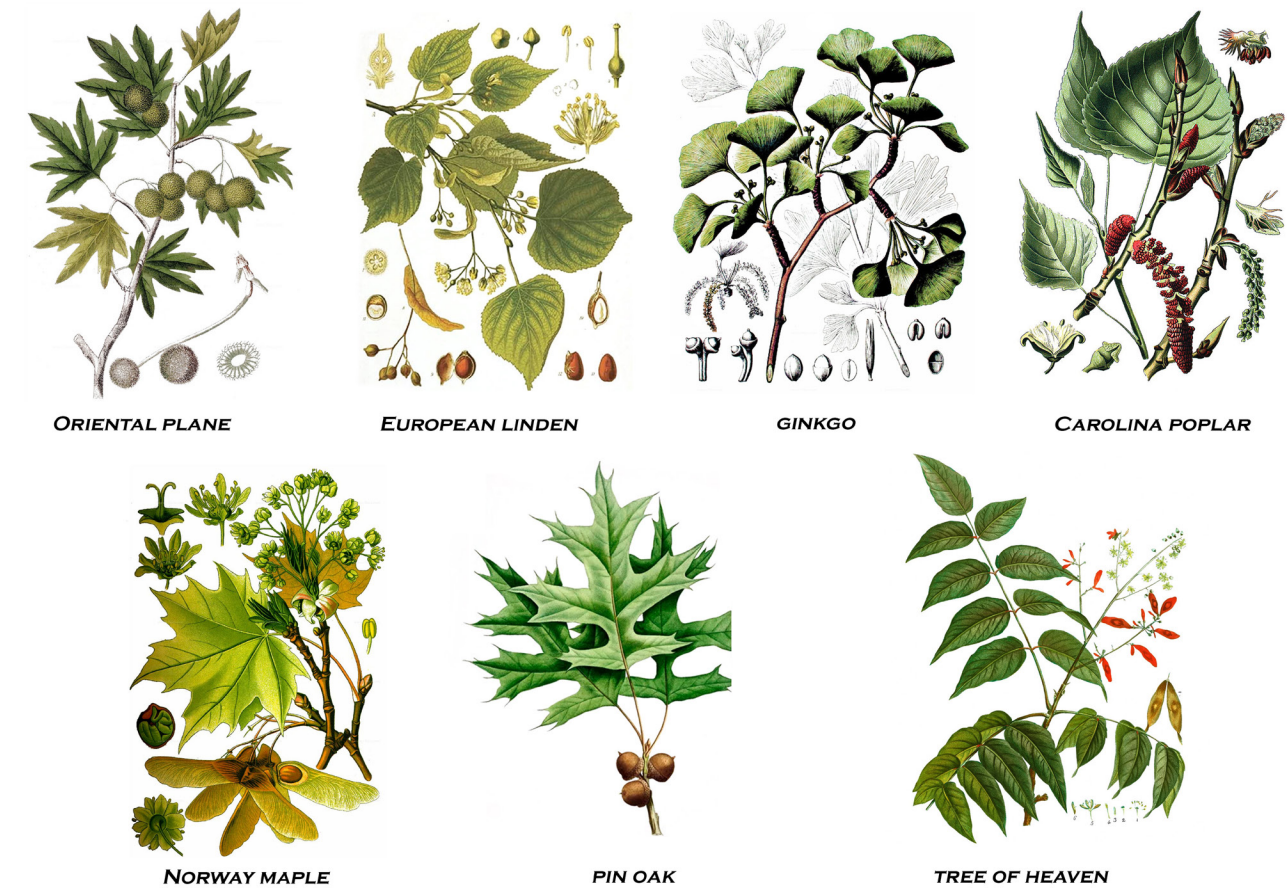
Should street tree planting be a private affair or public duty? Who is responsible for daily maintenance? Who's paying? Which department is in charge? How should the trees be planted? What are the ideal species? Most of these answers can be found in the NYC street tree planning timeline.⁹ The disappearance and the return of trees within the metropolis unravel our entangled relationship with nature. And it is interesting to see how ideas from back in the 1800s have such far-reaching influence on what the city looks like today.

⁹ Duempelmann, Sonja. Seeing Trees: A History of Street Trees in New York City and Berlin. New Haven: Yale University Press, 2019.



New York City's 1943 planning lists for postwar street tree planting showed the predominance of different species in the various boroughs. The difference is well kept in 2015 NYC street species mapping.

Trees regarded as the best adapted to conditions in Manhattan, 1914 , Laurie D. Cox



The ideal species chosen in 1914 are still commonly used as street trees in the northeastern area.

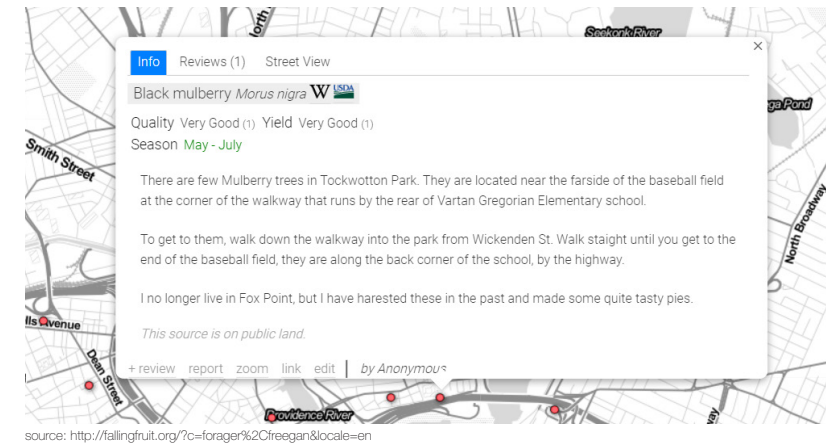
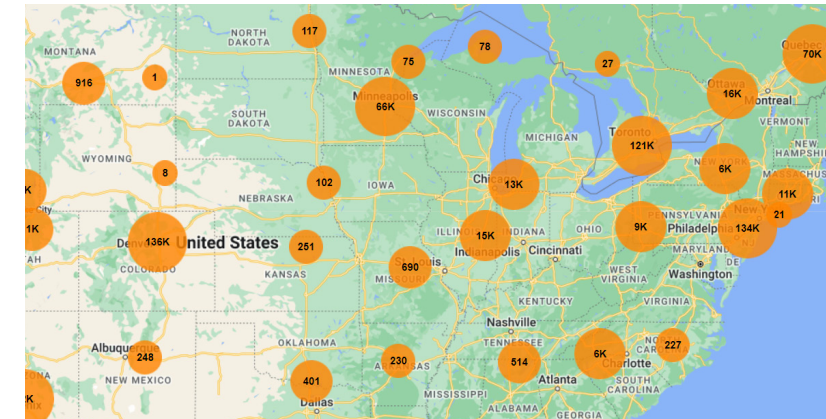
CASE STUDY 03: URBAN FORAGING,
A NEW WAY TO EXPLORE CITIES



source: <https://woodberrylife.co.uk/2018/09/05/urban-forager/>

In ancient times, hunting and foraging are two main ways to gain food in the wild. The habit disappeared when the industrial revolution and massive farming freed people from daily duty. However, with nature being driven away from the cities, urban foraging is coming back as a poetic and fun way to celebrate the wildness in our daily lives.

People from different countries experience urban foraging in their unique ways depending on local weather, plant species, and food culture. In some extreme versions, professional cooks take the chance to prepare ingredients on their own to explore the limitations of taste and smell. An interesting practice of this idea is a website that maps the urban harvest. This website has information on fruit quality, yield, season, and personal comments marked on the map. People can also sign up to add new information to the website. It is an open platform for urban foragers to explore the city together. Imagine more trees marked along the streets to invite every passerby to have a bite of the gift from nature.



“Falling Fruit is a 501(c)(3) (tax-exempt) public charity based in Boulder, Colorado.

Falling Fruit is a celebration of the overlooked culinary bounty of our city streets. By quantifying this resource on an interactive map, we hope to facilitate intimate connections between people, food, and the natural organisms growing in our neighborhoods. Not just a free lunch! Foraging in the 21st century is an opportunity for urban exploration, to fight the

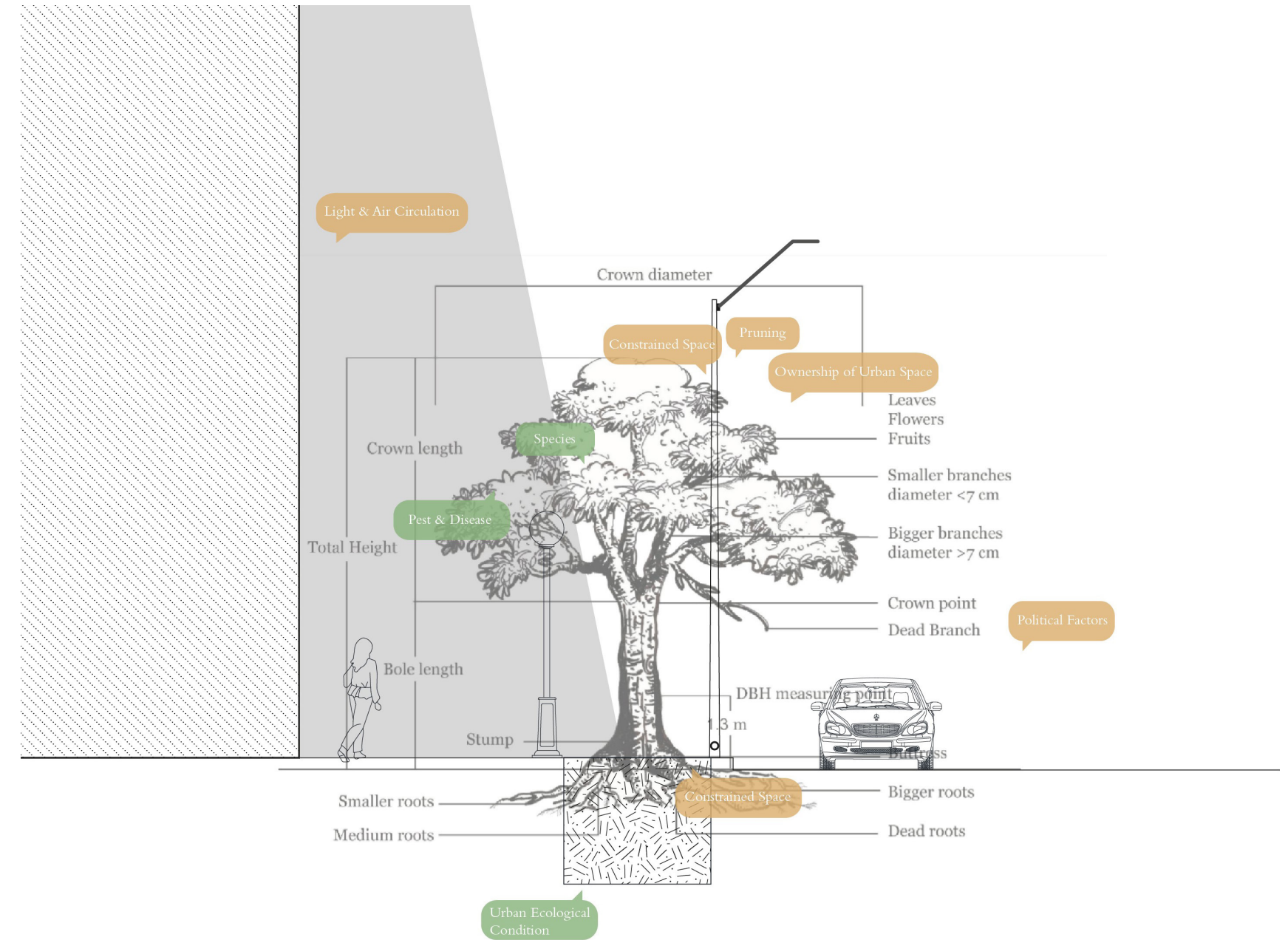


scourge of stained sidewalks, and to reconnect with the botanical origins of food.”¹⁰

—falling fruit, Map the urban harvest!

¹⁰ Falling Fruit. “Falling Fruit.” Accessed April 12, 2022. <http://fallingfruit.org/?locale=en>.

CHAPTER THREE STREET TREE & URBAN LIFE



FACTORS THAT SHAPE AN URBAN TREE

ECOLOGICAL ASPECT

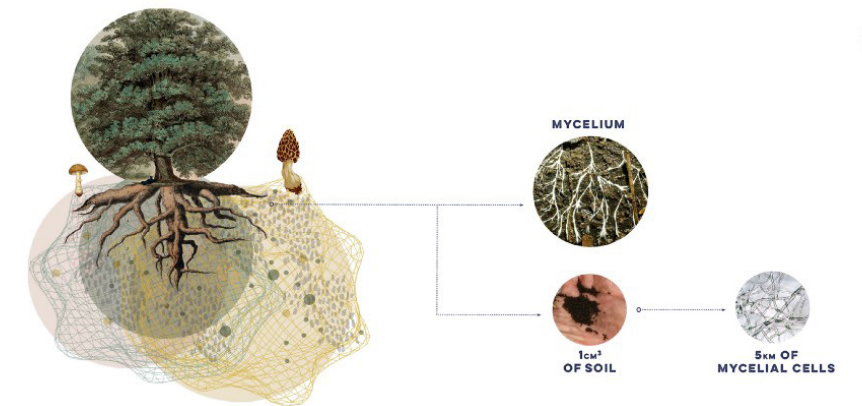
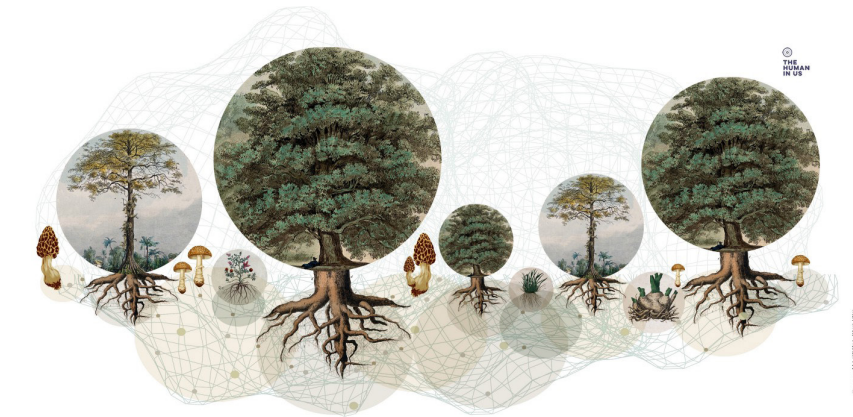
The concept of urban forest refers to a forest, or a collection of trees, that grow within a city, town, or suburb. It is fragments of nature that find their way into the artificial world with or without the help of humans. This term's "forest" part comes from the shallow resemblance to an actual forest. But once you think about it, they are two different concepts. First, most urban forests don't have a complex vertical system like a natural forest that contains a tree layer, shrub layer, and the ground layer that could be divided into more detailed categories. Most urban planting only has one layer for that the planting design is mostly human-usage-centered.

Second, the unit area is too small to allow anything complicated to happen because of its fragmentation feature. There won't be any animal from a high level in the food chain but only resilient species like rats, raccoon, squirrels, and rabbits who becomes an army of urban scavengers, which is another complicated topic.

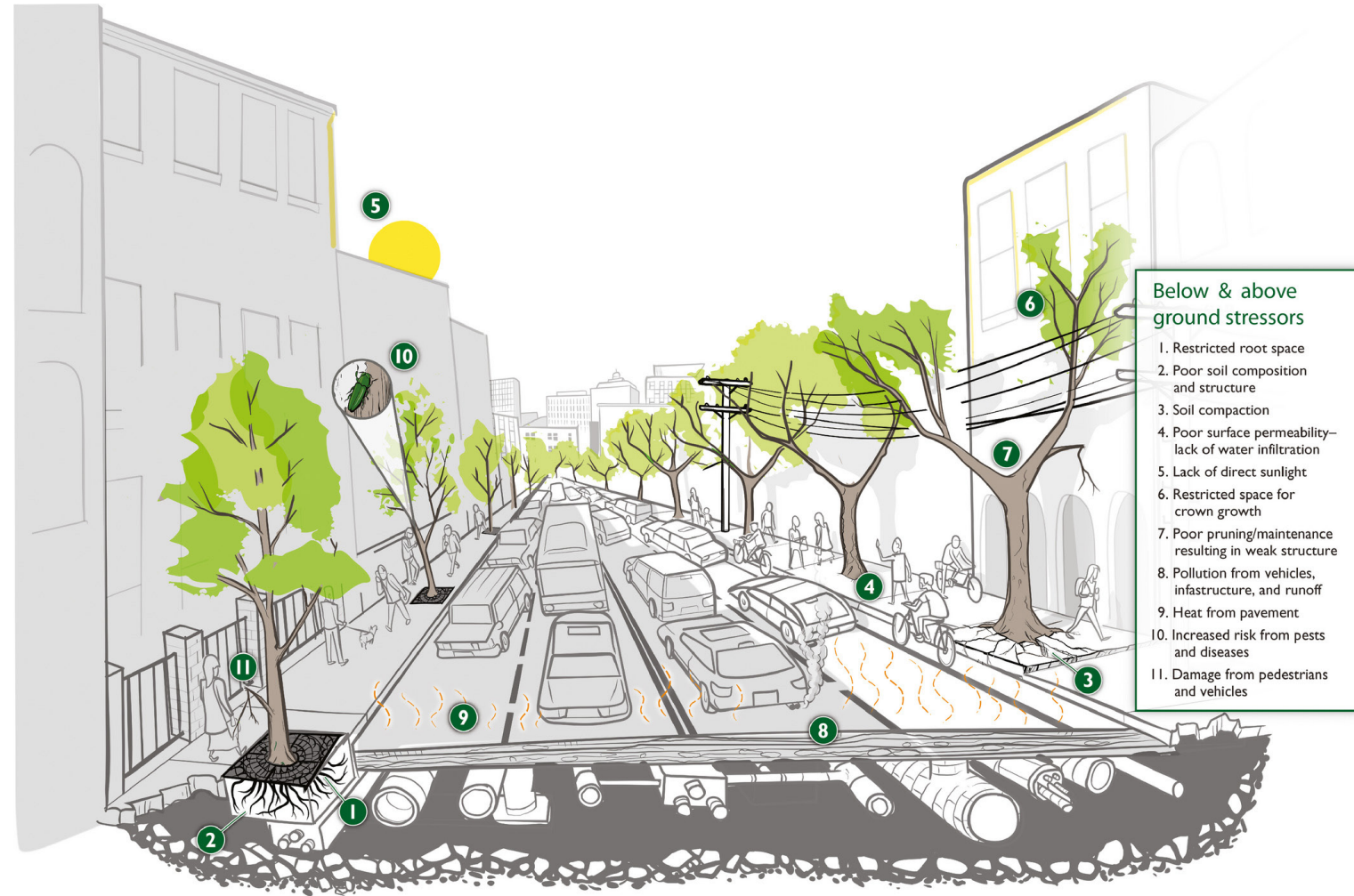
The third difference is human intervention. To keep the street trees from pests and to avoid competition from grasses, we use pesticides, mulches, and other ways to keep the "urban forest" clean and tidy. The absence of top predators is not as severe as the missing of the decomposer system. The lack of bacteria, fungus, earthworms, and other insects makes the decomposing stage takes forever in "urban forests." The fallen leaves and branches that could have been turned into fertile soil are taken away from the original plant to make soil for other locations. Also, the shape of crowns is restricted by artificial factors. Street trees are pruned according to utility lines, street usage, and aesthetic standard. The oriental plane tree in Europe has been cut back to the same spot each year in a technique called "pollarding." The fruit of the oriental plane tree has fluff that could cause allergies to certain kinds of people in the spring and the beginning of summer. This extreme pruning technique prevents the

street trees from fruiting and leaves expanded ends on the branches, which is not aesthetically satisfying. There's just too much to ask for a perfect street tree with features like pollution resilient, insect-free, fruit-free, straight-trunk, high-branch, deep-root, and fast-growing. Various kinds of human interventions are invented to make up for the missing features. Street trees are intensely under monitor and control, making them tamed nature in highly urbanized spaces.

Another difference is the missing of the "wood wide web." Trees don't live as separated individuals in the wild, and other than competing for water and sunlight, there is another level of relationship which relies on fungus. The underground network of mycorrhizal fungi connects the roots of plants and trees, transfers water, carbon, and nutrients, sending chemical warnings of attack, and either nurtures desirable neighbors or sabotages invasive ones. The system can keep old tree stumps alive and use the memory of past natural disasters to prepare for the coming ones. However, with separated planting slots and disinfected soil, the system doesn't exist in the urban forest. Each of the trees is on its own to survive in the challenging environment. Each of the street trees is a lonely fighter that is tough enough to tolerate the limited planting space, barren soil, and dusty air.



source: <https://medium.com/lotus-fruit/the-fascinating-social-network-of-trees-the-wood-wide-web-875af1fe36d0>



Source: Cavender, Nicole, and Gerard Donnelly. "Intersecting Urban Forestry and Botanical Gardens to Address Big Challenges for Healthier Trees, People, and Cities." *PLANTS, PEOPLE, PLANET* 1, no. 4 (2019): 315–22. <https://doi.org/10.1002/ppp3.38>.

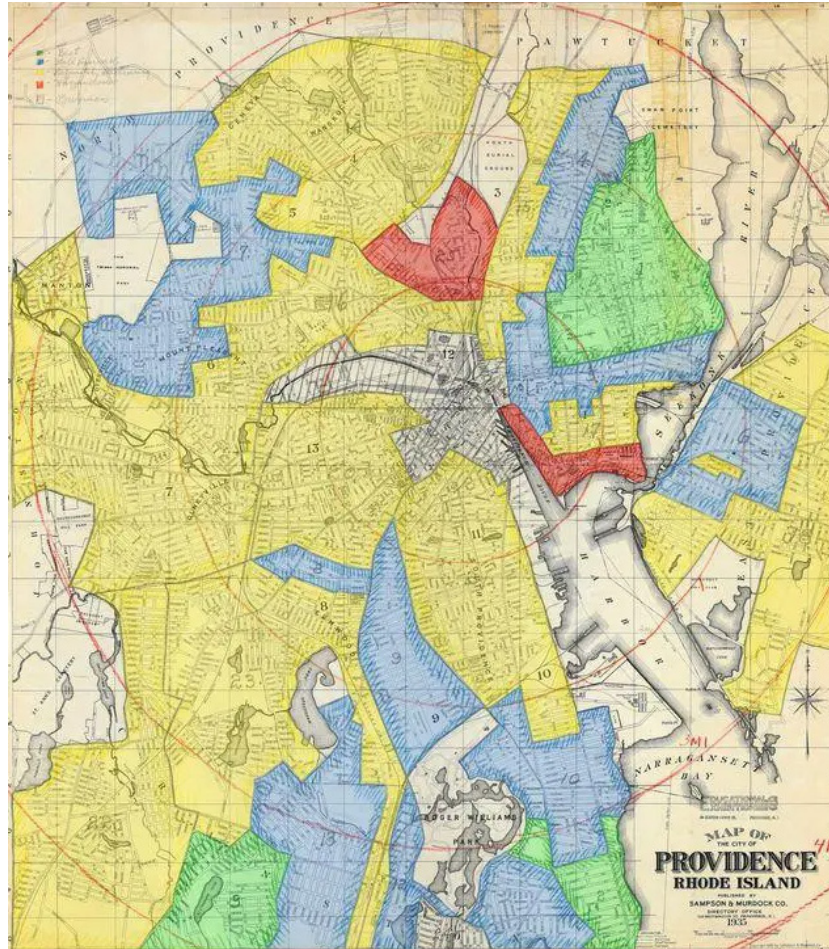
SOCIAL ASPECT

The planting of street trees is always in conflict with the city's expansion. When a wider road is needed, or new powerlines need to be installed, the only possible available space is the planting area unless the buildings could be removed to make the space instead. It is common to see the street trees pruned in strange shapes to make way for either cars or power lines. People are trying to tame nature to fit in an artificial environment.



The street trees are not only conflicting with the expansion of the city, but the growing tree itself is also conflicting with the built infrastructure. The sidewalks and retaining walls need to be redone almost every year. The debate over the proper distance of street tree planting between landscapers and planners lasted for a long time. Most people are not patient enough to wait until the tree reaches its full size. The consideration of spacing should align with the duration of the plan, a reasonable but human-centered solution that denies the agency of trees. In this case, trees are represented by their growing speed and lifespan in the role of

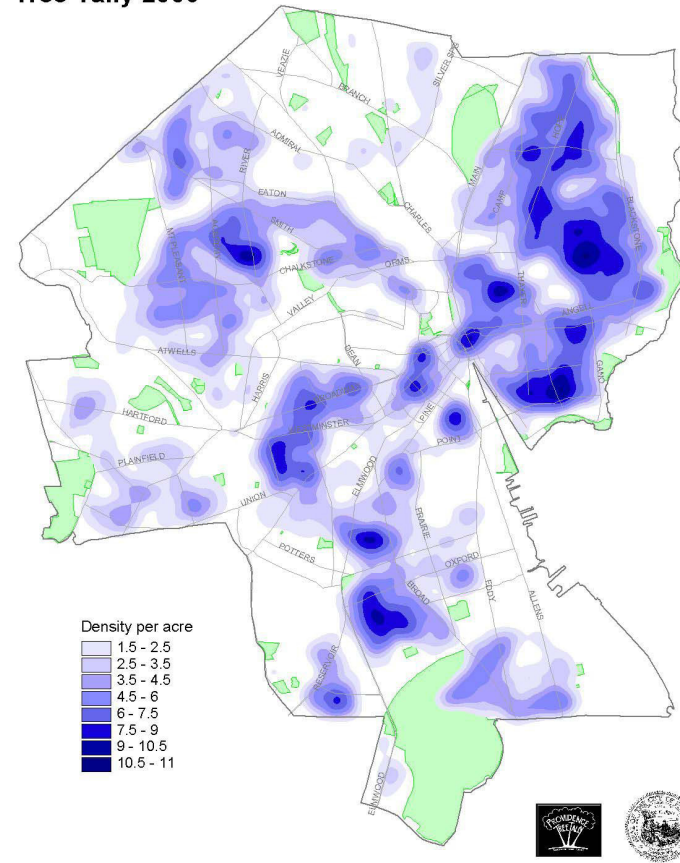
filling up the street space. The fact of confining a creature in a manmade environment is hardly considered by the city planners. The lifted-up pavements and cracked asphalt wrote the history of struggling. We can sympathize with the pain of a wounded animal easily but hardly of a strangled plant. Plants are often objectified as a decoration in our daily life. Can plants even feel the pain? With another kingdom/realm's dimension of time perception and reaction behavior, the human-centered thinking is hard to give agency and equal consideration to plants as much as to animals.



source: <https://upriseri.com/2018-02-13-cris-potter-oped/>

When streets need to be sacrificed for the expansion of the city, protest emerges. It is both for sentimental reasons and refusal of deterioration of the existing environment. In America, the area and quality of green space are always closely related to the financial condition of the neighborhood. Big trees and extensive lawns that create a pleasant experience are symbols of a wealthy area. The original plan that determines the distance between houses and the type of sidewalks can be traced back to the redlining map that is responsible for what most American cities look like

Providence Parks Department - Street Tree Density Tree Tally 2006



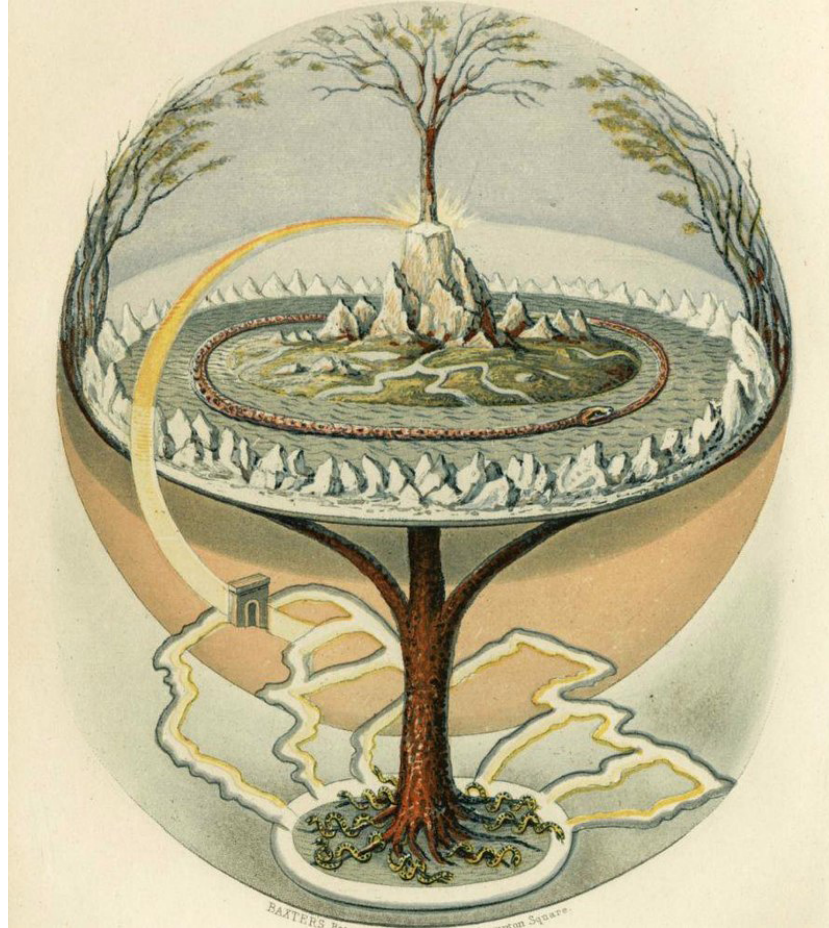
source: State of Providence's Urban Forest Report

today. The residential security maps created by the Home Owners Loan Crop after the National Housing Act of 1934 basically denied the right to take mortgages in areas of the colored race. As a result, the housing condition and infrastructure in the red zones were in bad conditions, which has a strong influence on what cities look like in America now. Take Providence as an example, the area of green around housing is strongly related to the original redlining mapping. The Freeman Plat Historic District is a beautiful neighborhood that was originally located in the

green/best zone. However, the Fox Point Area, which used to be the red zone, has little space between houses and is largely paved. A highway was built in the red zone, making the living environment even harder. When the basic living standard was yet to be fulfilled, the concern of planting street trees was unrealistic. The microenvironment provided by streets matters most during summer when even a 1-degree temperature dropdown is precious. The shade and coolness provided by the canopy can provide a much more comfortable commute environment. The influence of redlining lasts; so is the poor planted space in an area of the colored race. The original concept of environmental justice emerged in the 1980s, and it is a social movement seeking to achieve the fair distribution of environmental benefits and burdens associated with economic production. In those areas without proper street trees, people turn to seek shadow on hot summer days in common greens as compensation. The common in cities and street trees work together to form a system of green infrastructure, a network that provides the "ingredients" for solving urban and climatic challenges by building with nature. For example, the Prospect Park in Brooklyn, NYC, acts as a sanctuary for adjacent neighborhoods with few street trees and no access to air conditioners. Where can we find available space for green infrastructure? How do we make the best out of the limited space? And what are the prioritized needs for a neighborhood? Do people think street trees are important? The answers to these questions are helpful during the decision-making process.

The planning and funding vary in different states. In some cities, the street trees are funded half by the government and half by citizens. Participation from the beginning and the stewardship afterward can be the vital connection tied between people and trees. The idea of stewardship is an ethic that embodies the responsible planning and management of resources. People tend to care more when they have part of the ownership of the responsibility for the green infrastructure in daily life. Otherwise, the streetscape is easily ignored on their daily commute route taking the existing construction for granted. The social and historical factors are the

main power behind street tree planning. Entangled with city expansion, racial discrimination, and other historical factors, the planning of street trees still has a long way to go.



An 1847 depiction of the Norse Yggdrasil as described in the Icelandic Prose Edda by Oluf Olufsen Bagge

CULTURAL ASPECT

Street trees provide us with different ways to perceive time. The time for trees has two scales. One is the seasonal scale; the other is the life circle. Other than the temperature and the changing of sunlight, street trees are the most obvious indicator of seasonal change: the emerging new leaves in the spring, the shade during summertime, the fruit and foliage color in autumn, and the barren branches in winter. It is both a natural and poetic existence in a highly urbanized environment. Some studies show the association between mental health status and the healing power of the plant. The trees are a remaining part of nature to remind us of the inner connection we share with the natural life rhythm. It liberates people from the stagnant state of repeated daily life for a little while and acts as a tangible ruler of the passing time.

Another scale of street trees is the life circle scale. The perception of time of plants is different from animals. The duration is longer, and the reaction is slower. People often lack patience, especially when a construction project has just finished. Larger trees are often preferred, even though they are more expensive and harder to adapt to the new environment. On the other hand, the out-stretching branches and strong roots that destroy

the pavement consistently remind us of its strength and growth. The momentarily pulling away from secular daily life and putting oneself into a different time scale could be a healing and inspiring moment. The long lifespan of trees also makes them a long-standing company throughout one's life. A sense of home or nostalgia after one left hometown can be easily attached to a tree. Our emotional attachment is captured in the tree in the movie *Flipped* that the little girl tried to protect, the trees regarded as witnesses of historical events, the tree that stands in the background of one's entire childhood. The place we experience between the ages of 6 and 9 leaves the strongest impression during our entire lives. And a place is part of who we are.

The emotion people attach to trees can sublimate into something divine. Many religions like Shintoism in Japan and Buddhism in India either see plants as a form of God or the origin place of wisdom. In traditional Chinese medicine, plants are associated with magical characters that could be arranged in different ways to cure people. It is a combination of myth and science. In indigenous American culture, people share a more intimate relationship with plants. They believe different species, regardless of life forms, are equal parts of nature, which is precious in the age of objectification and alienation. The cultural attachment mentioned above might not be as strong as it used to be. Children's attention is more likely to be distracted by various artificial entertainments, which leads to the discussion of the era of alienation.

The separation between nature and culture can be traced back to the origin of agriculture and the process accelerated during industrial evaluation. The battle to bend nature and use the land as an emotionless tool for productive purposes has never stopped. And it takes a radical change in culture to permanently convert the way people treat the land around us. "Many contemporary Americans don't even know that they don't 'know the plants,' which is indeed a measure of alienation." This doesn't only cause people's indifference to the environment but also has correspondence with a surging rate of psychological problems like

depression and anxiety. The question is how to reconnect the two drifted entities of nature and culture in a highly modernized environment. Street tree, with their ecological benefits, entangling with social factors and rooted deep in culture, plays essential roles in modern life. Knowing trees and developing a healthy relationship between one's body and the outside world will help us to find better balance with nature both as individuals and as a collection of human beings.

CHAPTER FOUR
GENERAL STREET "SENSORY ANALYSIS" _EARLY SPRING 2022
Providence, RI



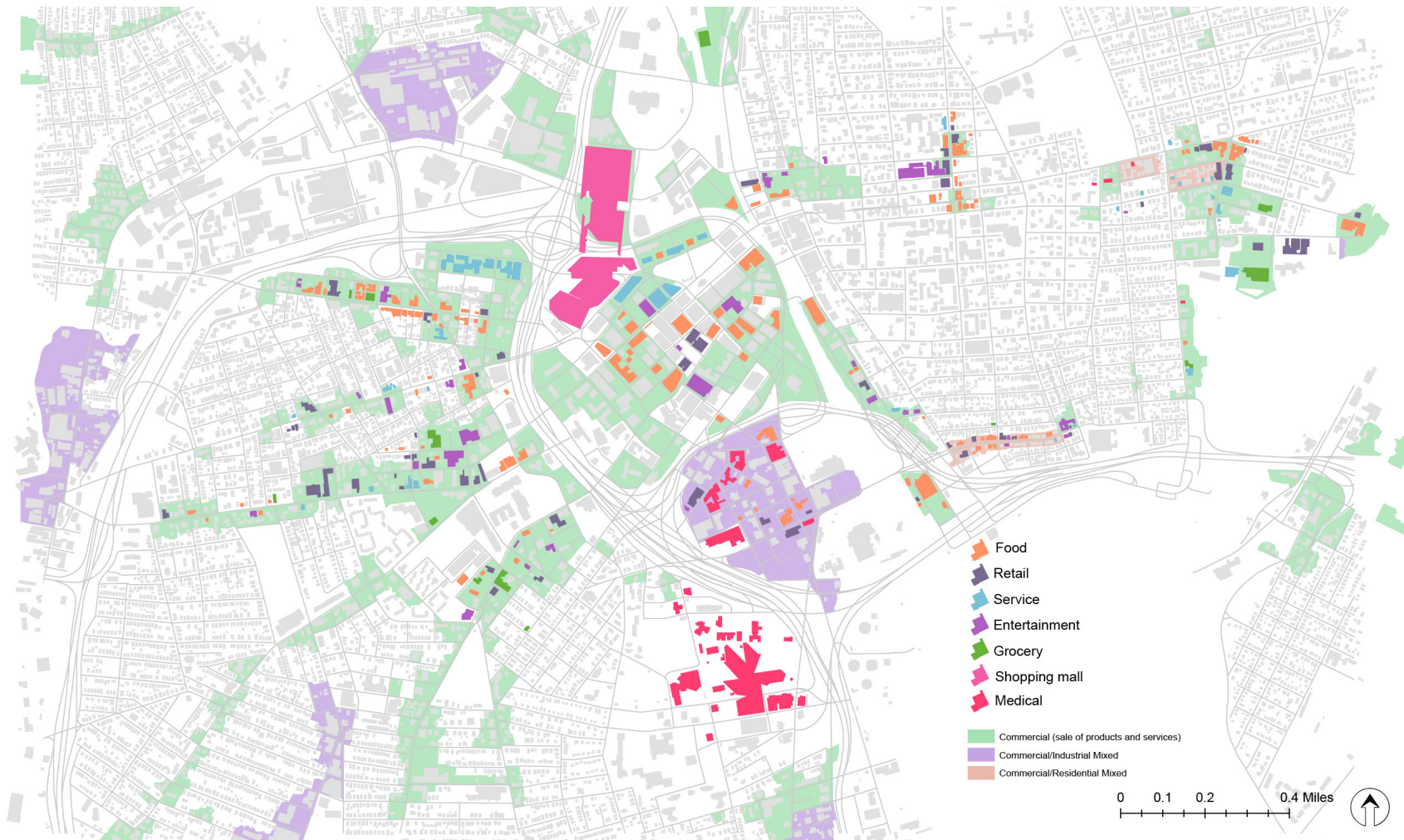
Providence neighborhood 2020 June, taken by the author



Study method

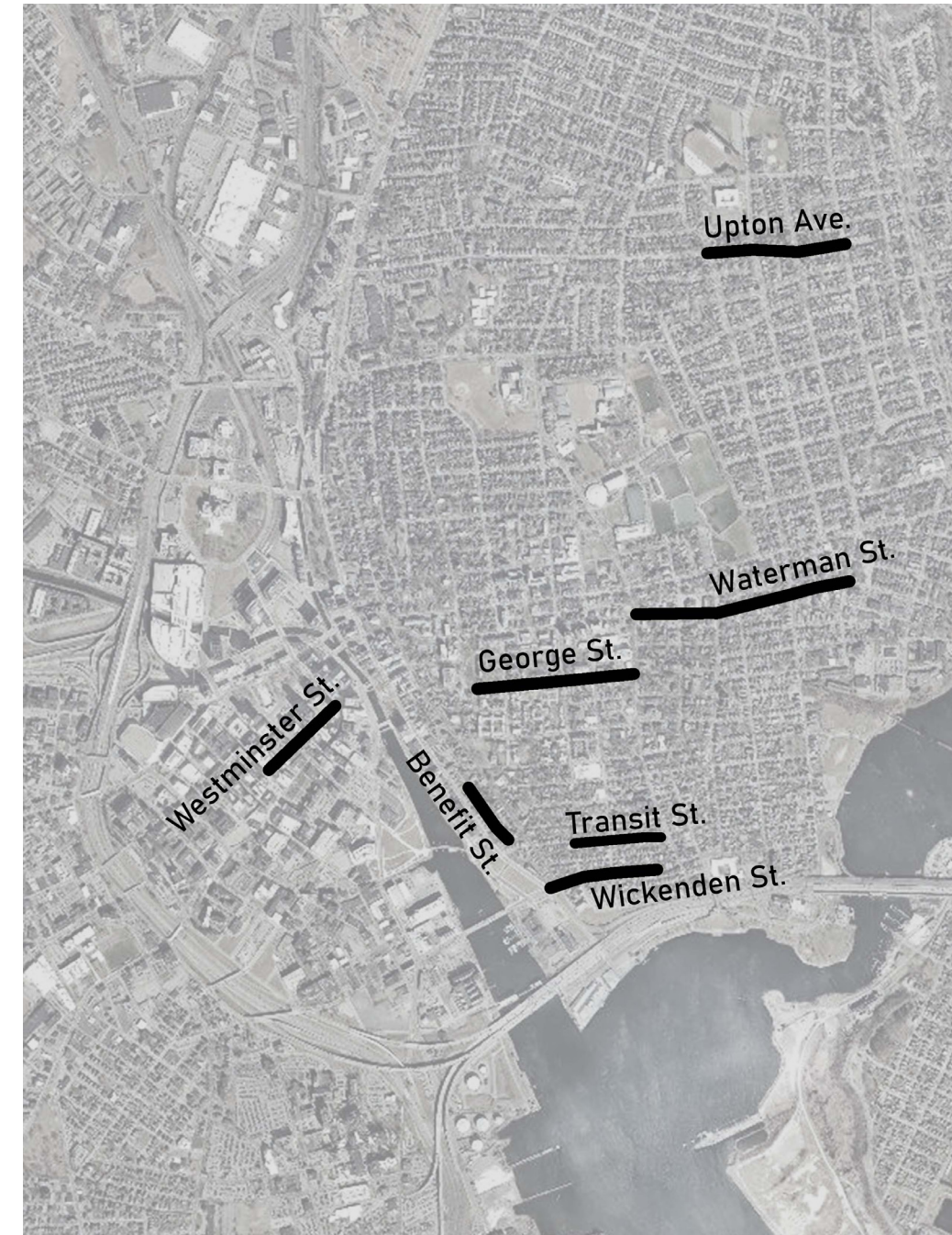
1. To observe the visual status of street trees in early spring, five factors are defined as: crown condition, trunk condition, root condition, artificial support level, and age/density of the tree. Each factor is given a score from 1 to 5(1 for the worst, 5 for the best). And all the scores for trees on one block are visualized in a 3D diagram to show both visual variation and growing conditions.
2. Use photographs and collages.
3. Use words to describe subjective feelings, for some are hard to express in the diagram.

What do street trees bring us? Other than the most apparent visual interest of the crown, there are so many other subtle but charming aspects worth paying attention to. In the chart, those features are listed according to the senses and color-coded according to parts of trees.



Selection of observation object

Seven streets are selected as typical representations of street tree conditions in Providence based on different-purposed land use zones. The usage of land is roughly divided into categories of residential, facility & industrial, and commercial.



Waterman Street: a main road crossing mostly residential areas and several commercial centers.

George Street: a street within Brown University campus, connecting the main campus with the student dormitory.

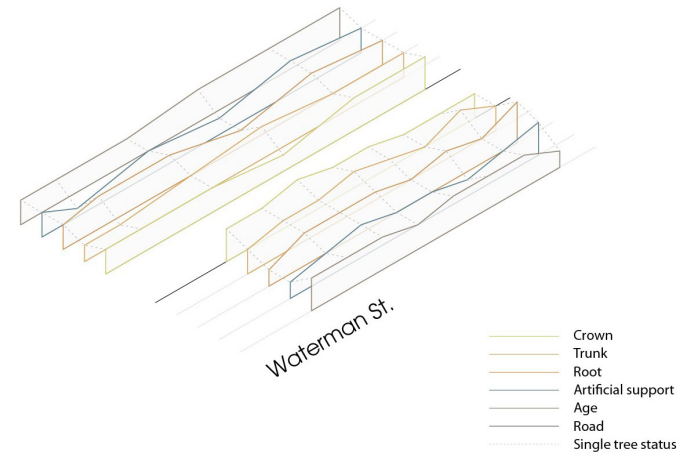
Benefit Street: located in a historic neighborhood.

Transit Street: a typical street in Fox Point neighborhood.

Upton Avenue: located in Freeman Plat Historic District, a wealthy neighborhood.

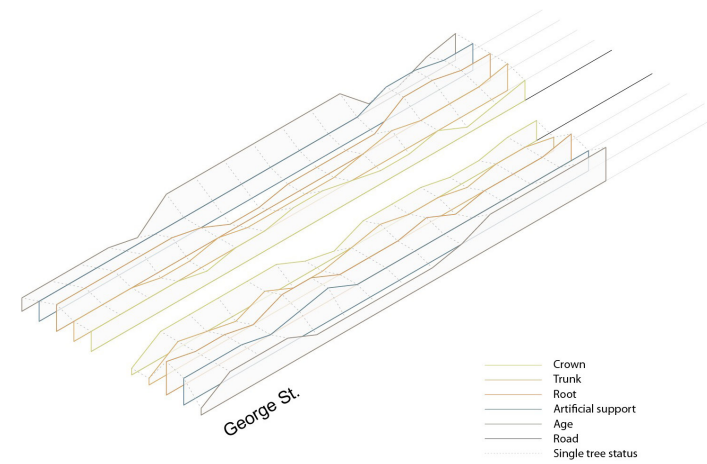
Wickenden Street: an active art and commercial center.

Westminster Street: downtown commercial district.



The species mainly used on the block that I observed was maple. The mono-species style of planning dulls the sensory perception. Their inconspicuous tiny red flowers are easy to recognize in early spring. The clustered flowers dye the branched into dark red against the sky. It is interesting to look at closely but not significant enough to catch people's eye from far away.

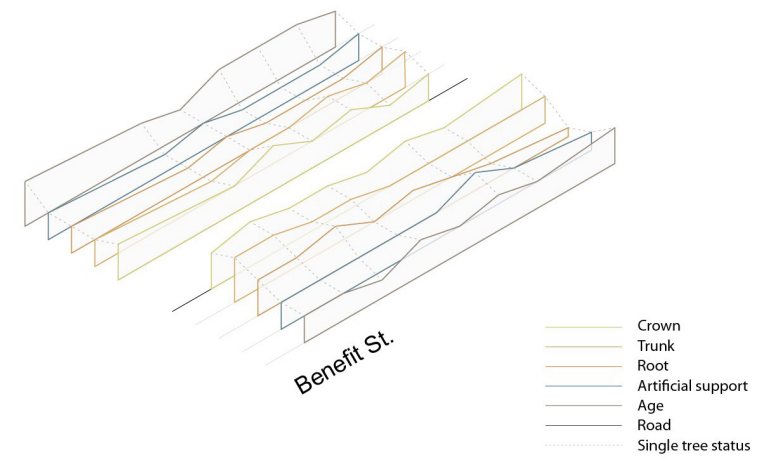
The other species spotted on the block is common honey locust. Its trunk texture is different from maple. And the branches, from top to bottom, tend to be covered with lush lichens before the leaves come out. The lichen doesn't harm the tree but provides a mysterious look. The preference for growing on one tree instead of another has something to do with the microclimate and water availability on the trunk. Because lichens don't have any root system, they obtain water and nutrients directly from the air. This means that they are sensitive to air pollution and could be an indicator of urban environment quality.



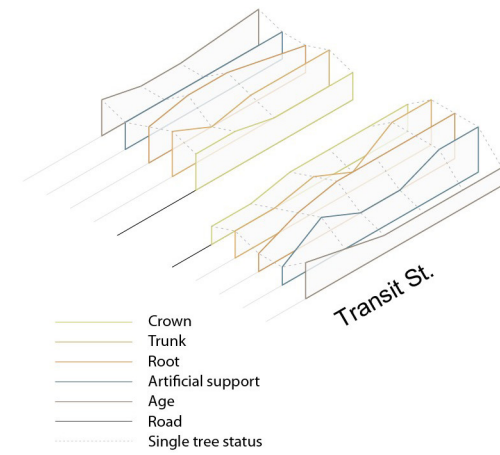
The huge age gap of the trees is the most obvious thing on George Street. Dead old trees got replaced by young ones of different species. The existing old plane trees have burls all over the trunk. The burls are unpleasant visually, even though it does no harm to the tree.

The young ones are mistreated with rough pruning. All the side branches were chopped off carelessly with broken fiber exposed in the air. For those young trees, problems are rooted from an early stage.

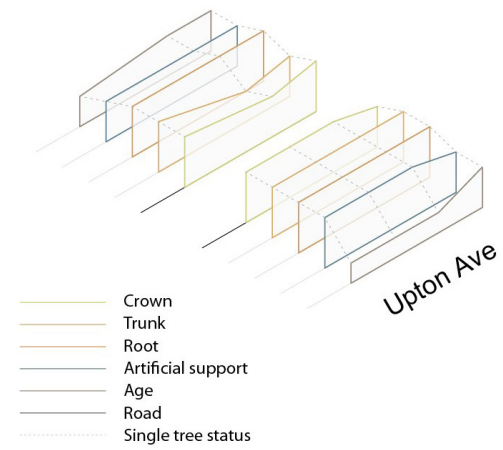
As for the user of this street, being purposeful and distracted, they didn't seem to pay much attention to the street trees.



The limited planting space strangles the roots. The sidewalk pavement is lifted up frequently. The struggle of the trees evokes empathy.

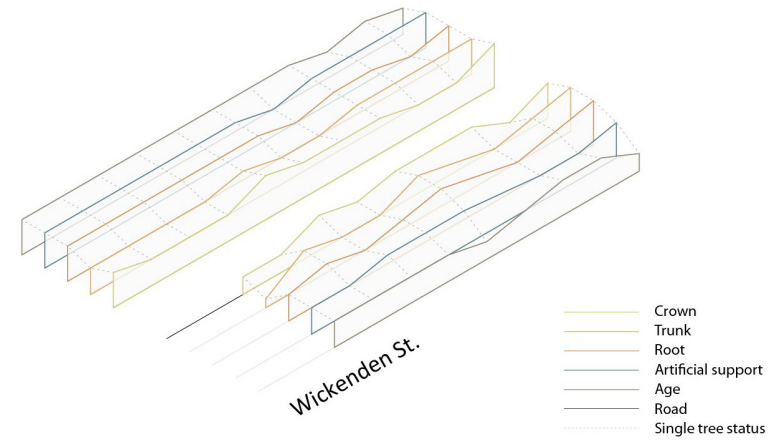


Simple streetscape can amplify the existence of trees.
The trees are well taken care of by Providence neighborhood planting program.

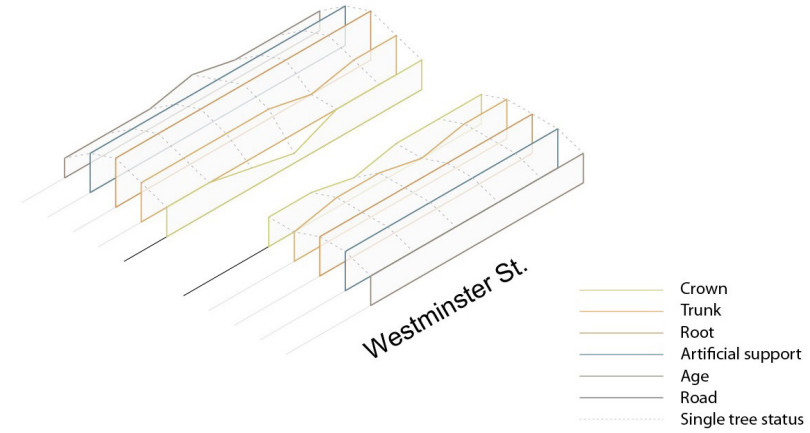


Generous space.
Close connection with adjacent households.





Destructing streetscape.
Active building façade “narrows” the sidewalk.



What's the difference between shade caused by buildings and trees during summer? Do people have a preference?
There is not enough sunlight on one side of the street for growth.
The strong contrast of hard urban infrastructures and soft natural textures emphasizes the existence of the street tree.
The planting box lifts the soil to eye level.

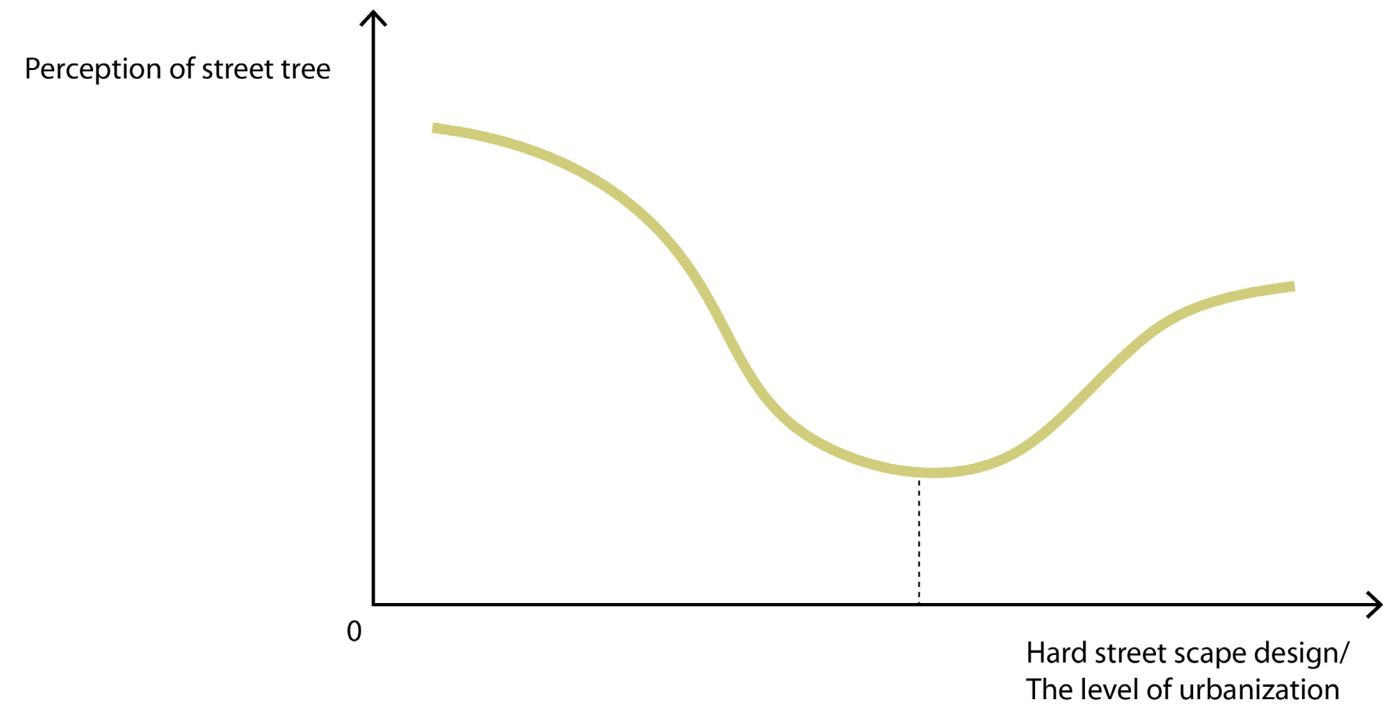
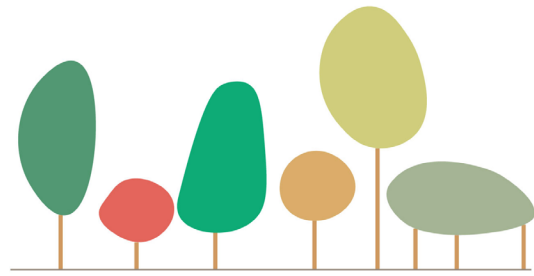


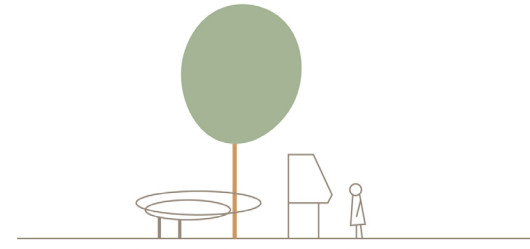
Diagram: relationship between the complex level of streetscape design and the perception of street trees

CHAPTER FIVE

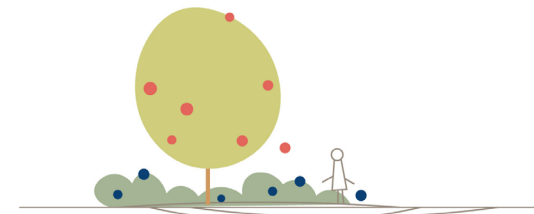
NOVEL STREET TREE PLANNING



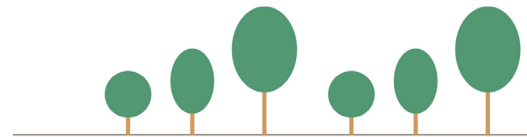
01 Multi-species & age planting design



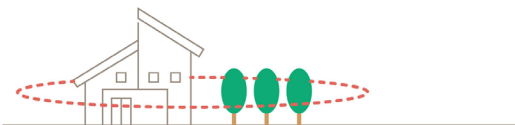
04 Magnified senses through installation



02 Urban forage

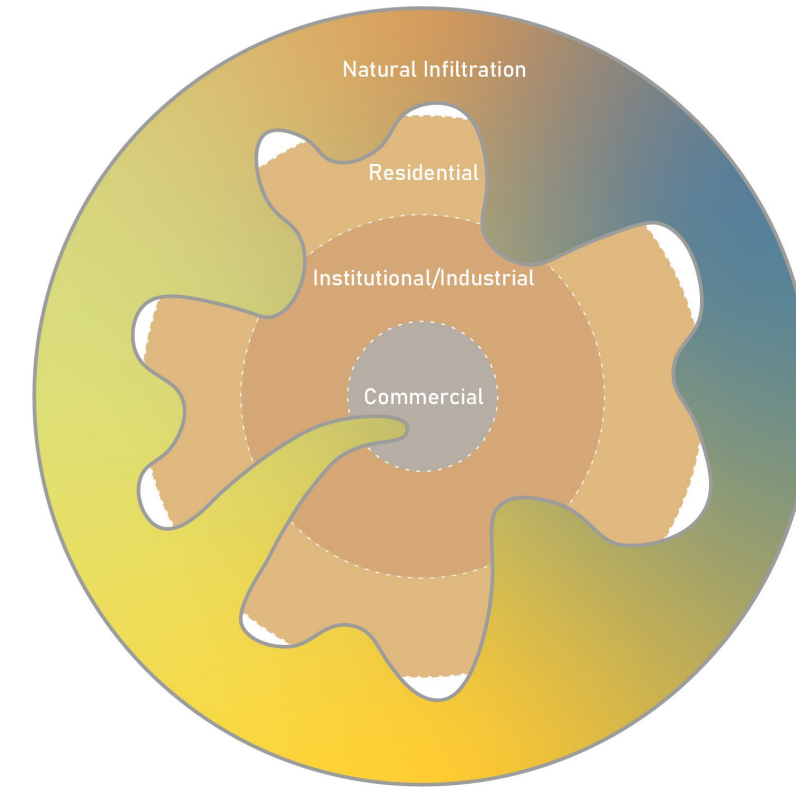


05 Street nursery



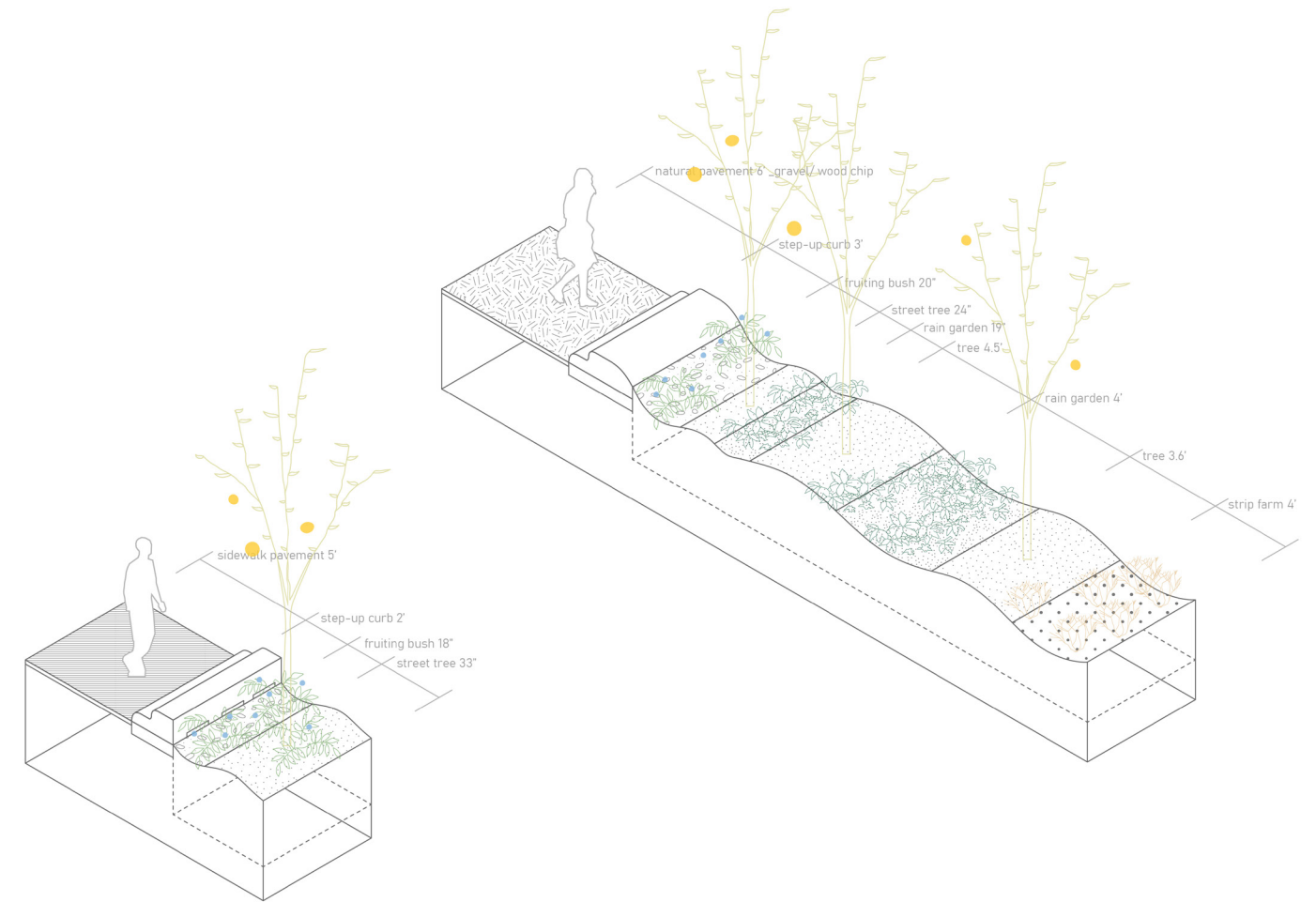
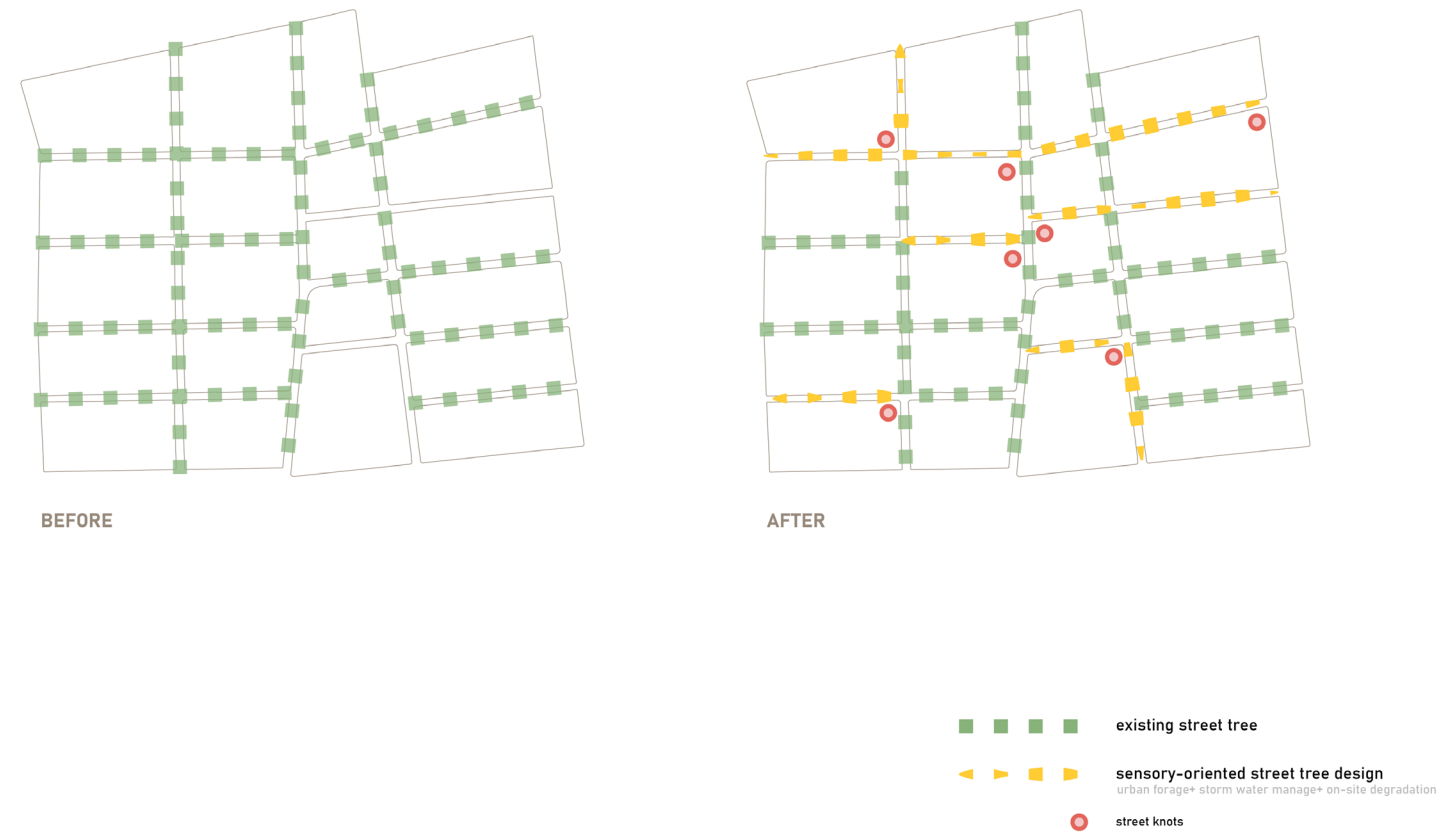
03 Assigned responsibility

01, 02, 03_ Residential
04_ Commercial
05_ Facility & Industrial



Nature infiltration

A street tree plan that leads the way for nature to gradually reach the core of the artificial system



The renewed system

The new street tree plan is based on the existing condition. The plan selectively updates blocks with the new sensory-oriented design and adds “street knots” to intensify sensory experiences.

Curb, Topology, Plants and Pavement, ideas for the new planting plan

Curb: Transferred into a step stool, the curb empowers pedestrians to reach for the fruit.

Topology: Subtle topology design of the planting area creates different moist conditions and captures fallen leaves, branches as well as fruits.

Plants: New species (mostly fruit trees) are invited to the streetside to provide a richer experience.

Pavement: Pervious pavement with rough textures provides a venue for decomposition.

Proposed street tree plan

Urban foraging:

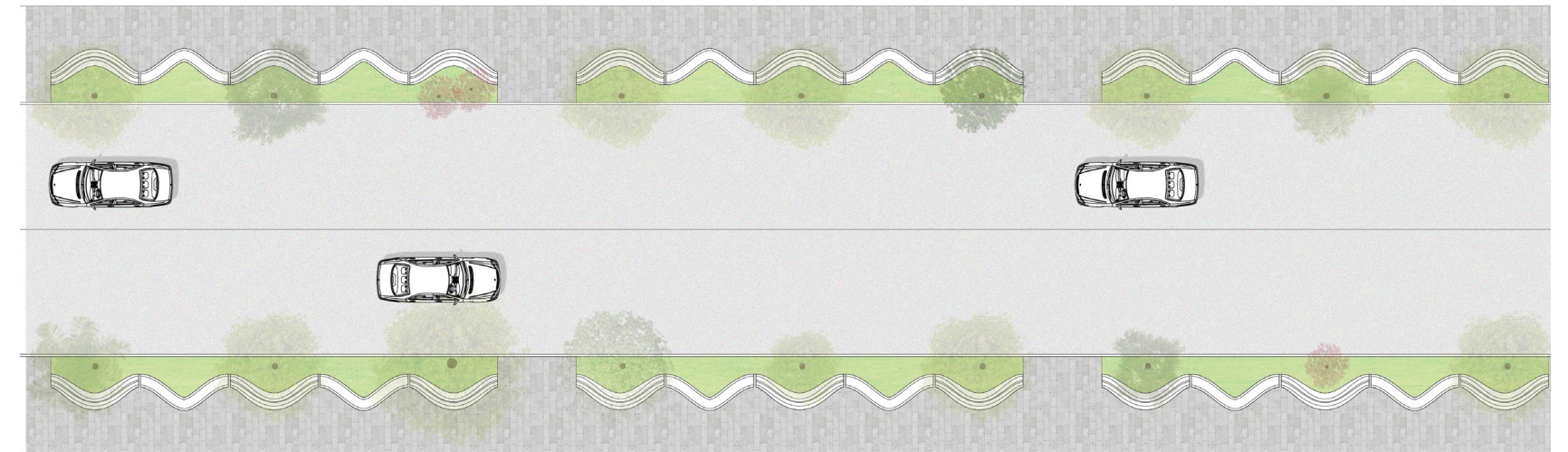
Curb as step stool to help individuals to reach fruit from trees.

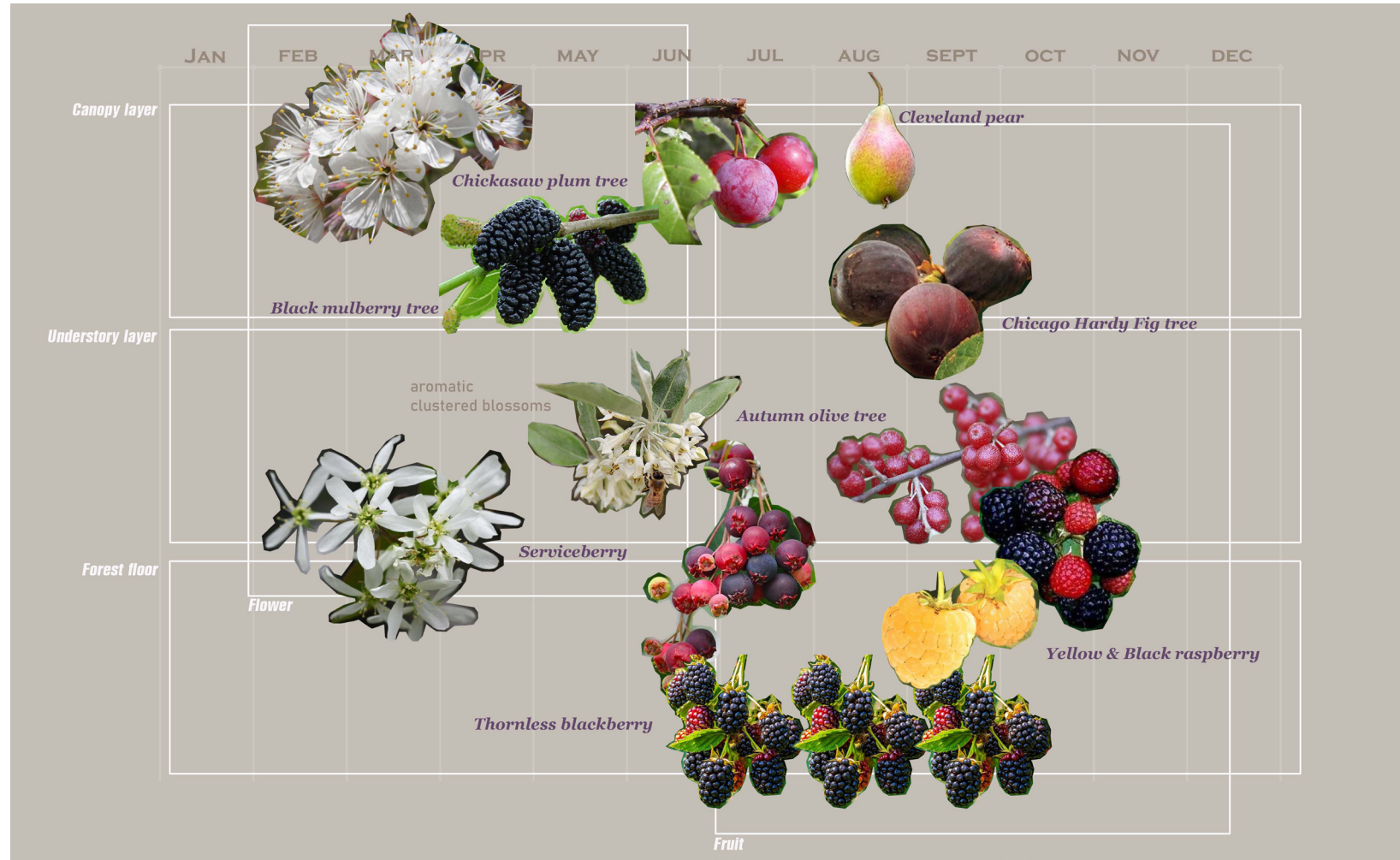
Fruits serve as positive feedback from the intimate relationship we share with trees.

Rain garden:

Curb as small pathway to encourage playful passage.

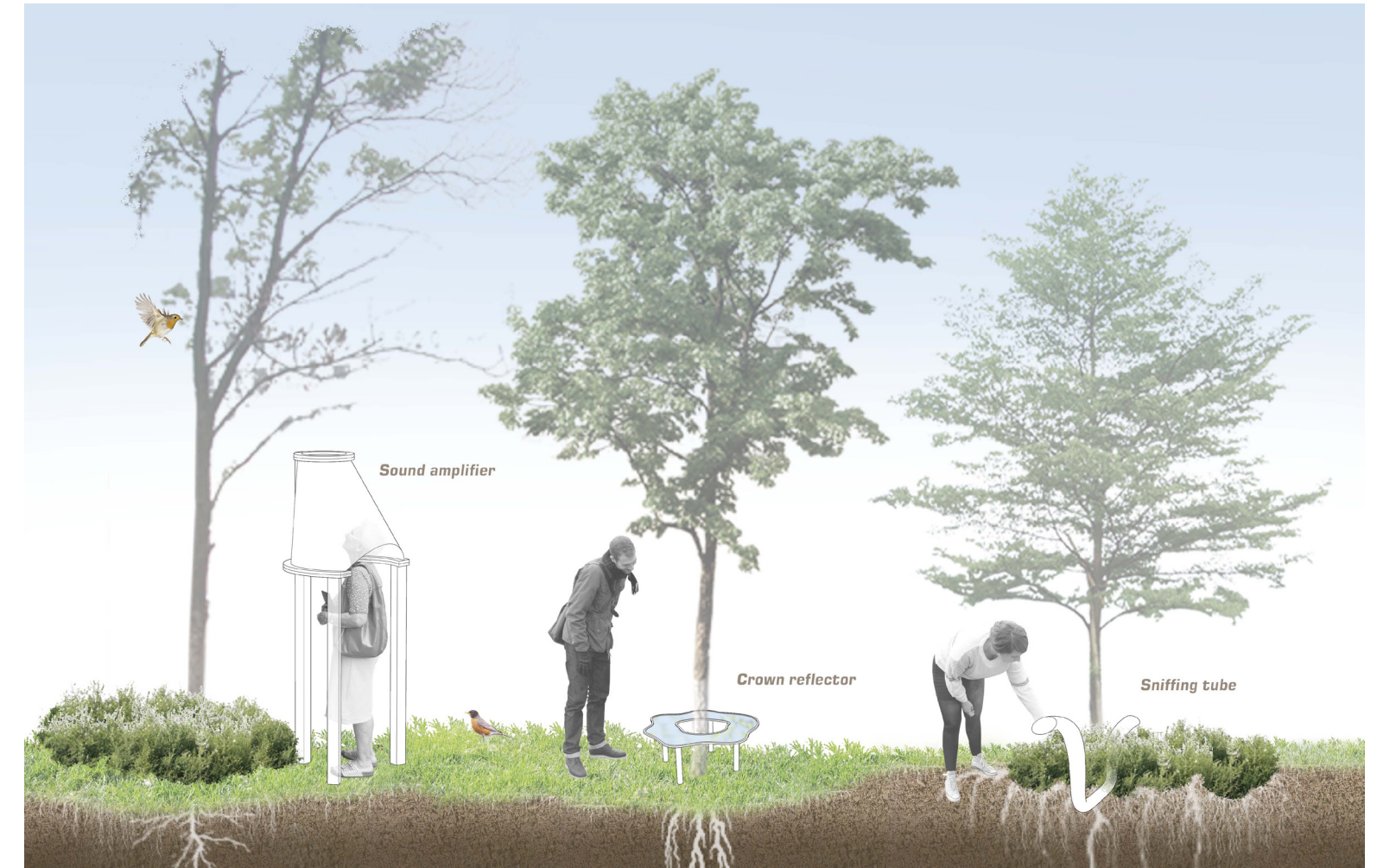
A clear edge indicates the massey-looking design is done so deliberately.





Proposed species for sensory-oriented street tree plan in Providence

Some fragile berries rarely seen in stores are included to enrich the tasting experience.



Examples of Installations that intensify the sensorywww

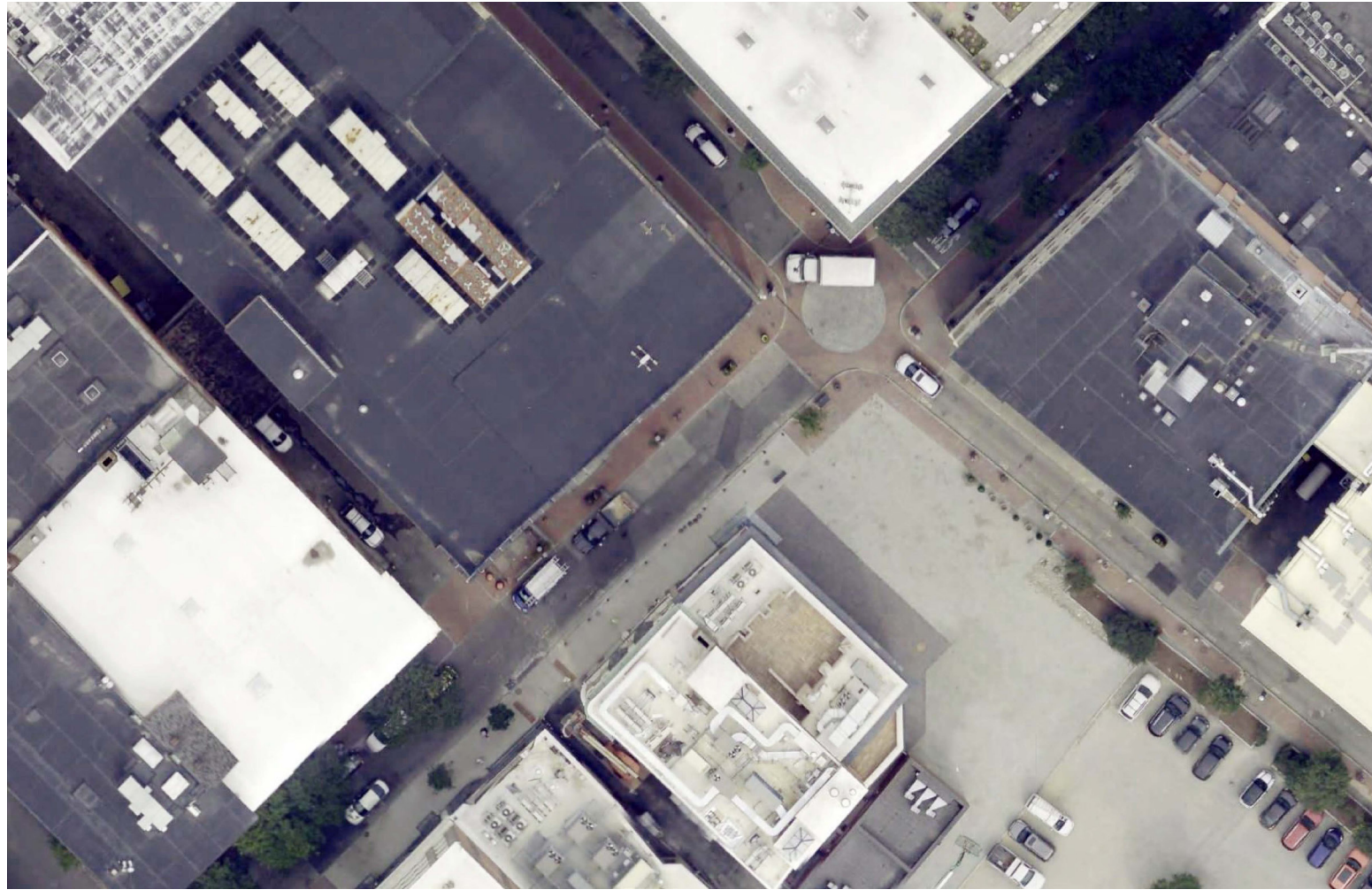


Systemic design 01

Residential zone

Transit Street* Hope Street





Systemic design 02
Commercial zone
Westminster Street* Union Street



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